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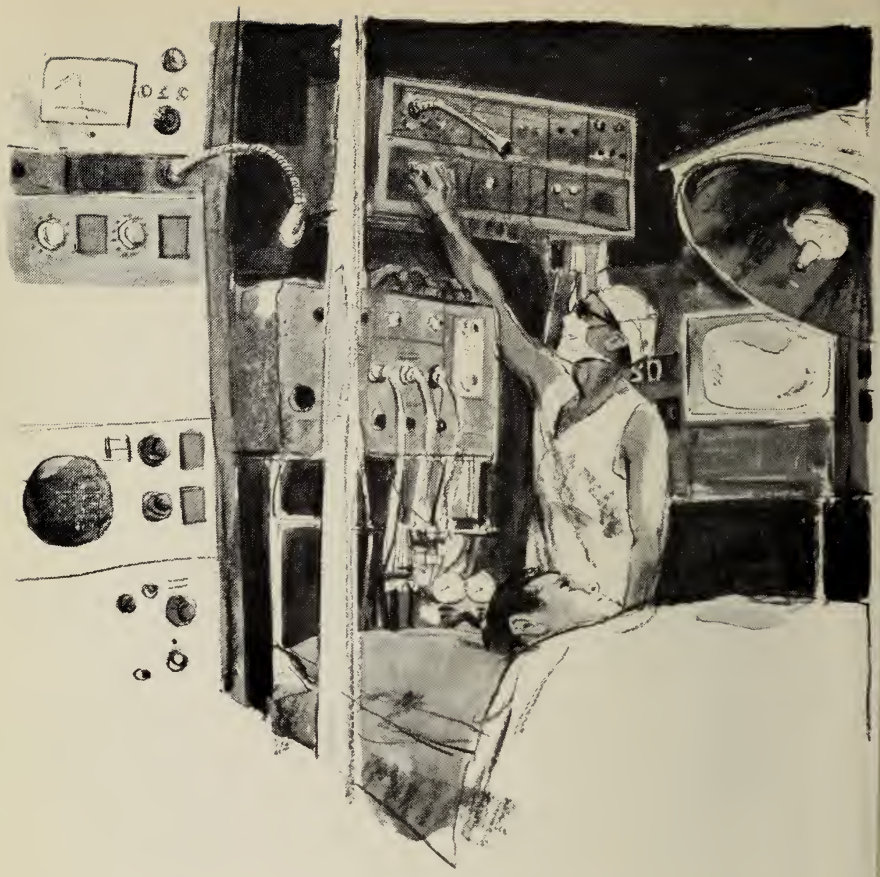
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GRADUATE

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VARSITY
GRADUATE

Volume Thirteen **Number One**

December 1966

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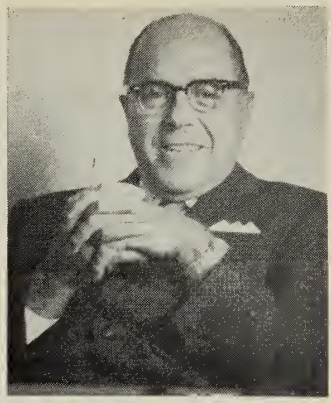
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THE CHANCELLOR AND HIS SON ..... Back Cover
A photograph by Bob Lansdale



In January, Dr. A. L. Chute left his post in Paediatrics on a round-the-world tour of Commonwealth medical centres as a Sir Arthur Sims Travelling Professor under a trust administrated by Royal College of Surgeons. Soon after his return he was appointed Dean of Medicine. (*See page* 22.)

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The Editor of VARSITY GRADUATE is Kenneth S. Edey, director of the University's Department of Information. The other members of the department are Lawrence F. Jones, assistant director; Leonard Bertin, science editor; Crawford Grier, humanities and social sciences; Mrs. Winogene Ferguson, information officer, and Mrs. Doreen McMeeken, production supervisor.

Other periodicals published by the Department of Information are VARSITY NEWS, in October, December, March and May for graduates and former students; and STAFF BULLETIN, monthly from October to March.

Requests for rate cards and other information about advertising should be addressed to Mrs. Jean Balint, VARSITY GRADUATE's advertising representative, at Department of Information, Simcoe Hall, University of Toronto, Toronto 5, Telephone 928-2105.

Below: THE AUTHOR, MEMBER OF THE THREE-MAN PLANNING TEAM FOR SCARBOROUGH COLLEGE, USES ITS TOPOGRAPHY TO ILLUSTRATE A POINT FOR STUDENTS IN LANDSCAPE-ARCHITECTURE DEGREE COURSE



A Sense of Place

MICHAEL HOUGH

LANDSCAPE ARCHITECTURE, once regarded by the public as primarily concerned with horticulture and the exterior decoration of public buildings, is today in the forefront of those professions addressing themselves to the broad problems of planning and design of our cities and countryside.

The establishment of the Division of Landscape Architecture at University of Toronto was stimulated by the increasing demand for well-trained professional men, which could no longer be satisfied by drawing on schools in the United States. There is also a growing realization among many public agencies and private organizations that there are areas of land planning and design that the landscape architect is better equipped than others to handle. He is concerned with the city and how people use space in their work and play; with conservation and park planning both on a large and small scale; with land reclamation such as the re-use of mined-out land, and industrial dumps. He relates his knowledge of the natural sciences to planning at the





Professor Hough's course in landscape architecture, which he directs, brings out the "sense of place", as demonstrated in Philosophers' Walk (*above*), rebuilt so as to provide a delightful, yet convenient, pedestrian street for the north side of the St. George Campus. *Below*: The main entrance and approach to the Ramsay Wright Zoological Laboratories, left, and their corner terrace exemplify the thinking and designing of landscape architects.





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regional level, and to the design of small urban courts and gardens. As a designer he uses the tools of his profession, building materials, plants, water, sun and shadow and the changing seasons to create places of utility and beauty.

The landscape architect has an important role to play in university planning. When the University of Toronto made its initial move to implement plans for the development of a new college in the Township of Scarborough the landscape architect was asked to develop an initial site plan for the college prior to architects being called in to design the various buildings. The nature of the problem, however, indicated that this should be the work of a team of professional men, including a landscape architect, an architect, and a town planner. The University agreed to this proposition and a team was retained to carry out the master plan.

The members of this group subsequently formed the basis of the present University Planning Office, charged with the master planning and development of the St. George Campus and Erindale College.

The development of the Scarborough plan was unique in the fact that it involved the close collaboration of planner, architect and landscape architect to produce a comprehensive and unified design concept. The planning study analyzed the interaction between the proposed college and the surrounding community. A landscape survey of the site was made to determine the best use of the land

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Professor Hough and students relax in an atmosphere planned for casual contacts and informal gatherings — the quadrangle of University College, completed with the addition of Laidlaw Library wing.

as related to the college programme. Analysis of topography, drainage patterns, local climate and existing plant materials, revealed that certain areas were tolerant to development, while others were valuable for field research for the natural sciences. From this analysis it was possible to develop a land use plan, which showed what parts of the site were best suited to building, parking, and related services, to athletics, to field research and conservation. The survey in addition pointed out the problems that might arise when concentrated development is imposed on the natural landscape. The paving of large ground surfaces for parking and pedestrian walks and spaces, for instance, generates problems of increased surface run-off and the consequences of erosion. Preservation of natural plant growth is essential to prevent destruction of valley slopes and to ensure their stability. Land analysis of this kind is one of the most important contributions that the landscape architect can make at the planning stage, since he is trained to understand the land and relate it to design criteria. At this stage the architect developed the building concept and worked with the landscape architect in the development of the concepts that produced the master plan. These concepts included the development of a pedestrian campus, the involvement of the total site in the academic and cultural life of the student, a strong relationship between indoor and outdoor uses and circulation, particularly as related to climate.

The detailed design of the site included the preservation of the existing landscape and native trees near buildings, the layout of roads, parking areas, path systems, outdoor spaces and planting. Provision was



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made for many kinds of space to occur, each having its own function and character and relationship to adjacent interior uses. Parking areas were separated by berms (mounds) and planting to minimize the impact of large asphalt surfaces and shiny metal on a rural landscape, and to screen them from view. The science court was designed to be seen as a landscaped courtyard contrasting with the wilderness landscape on the south side of the building. Circulation routes follow the natural desire lines of student traffic and provide short cuts through the court in fair weather, and planting is designed to enhance views from the pedestrian street. Seating areas are associated with entrances, where people naturally tend to gather in summer months. The south terrace is an extension of dining room spaces with magnificent views over the valley and was conceived as a large brick plaza, providing the framework for a variety of informal uses for many people. The copse will ultimately be developed as a shady park, a quiet place to enjoy and walk through. The wooded slopes were reserved as an outdoor laboratory and for field research, while providing a magnificent setting for the buildings.

An existing university in the middle of the city poses different problems from those of a new campus in the suburbs. There are questions that must be dealt with through the co-ordinated efforts of a planning team: problems that are in many respects typical of any urban environment, and ones that the landscape architect is concerned with in his work. These include parking, conflicts between people and vehicles, disconnected buildings that do not allow for covered access between them, limited space for athletic facilities and recreation, and the requirements of expansion.

A major university represents a wealth of knowledge, of diverse outlooks and attitudes. It is a meeting place for people of many backgrounds. A landscape plan is potentially a tool for creating functional and visual unity among a number of disconnected parts. To be successful it must also consider the social and spiritual life of the university. It must provide an environment in which there is a richness of events and places. It must provide a framework where formal ceremonies, rallies, casual contact, conversation, solitude, can occur spontaneously. Such events shape the plan. These considerations are easily forgotten when there are immediate and urgent problems of providing classrooms, laboratories and office space, but they represent the difference between an environment that reflects the richness, complexity and excitement of university life and one that is no more than a utilitarian place to work. The planning principles and academic philosophies that produced Oxford and Cambridge are today largely defunct. They still have one attribute, however, that may be still relevant today: they represent an image of university life as a total experience; they have a sense of place.

The landscape plan for the St. George campus attempts to give

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Six distinguished Canadians — G. Maxwell Bell, Calgary; The Hon. J. V. Clyne, Vancouver; Dr. Roger Gaudry, Montreal; The Rt. Hon. J. L. Ilsley, Halifax; Dr. O. M. Solandt, Toronto; Dr. A. W. Trueman (Chairman), London, Ont. — are acting as a Selection Committee. They are a completely independent body with full powers of decision in selecting award winners.

Nominations should be addressed to:
The Secretary,
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Steps leading to the Faculty of Law were designed for beauty as well as utility, as an integral part of Philosophers' Walk — another example of landscape architects at work on the face of St. George Campus.

physical form to this idea through the ordering of vehicular traffic and pedestrian movement patterns in the campus, and the development of the spaces through which they pass. Major meeting places occur naturally at points where pedestrian routes cross. These represent points of greatest social contact between students and faculty, and are places where one would logically find the student union, the book store and other communal facilities. They are major reference points in the campus, places where one is likely to meet friends, find out what is going on in the University, peruse a map of the campus, sit in the sun or watch girls. Such places are urban in character, richly paved, with sculpture, seats, shade and water. There are places that reflect the quietness of university life; quadrangles and courts where one can sit in the sun, read a book, listen to the birds, enjoy tranquility. There are walks that lead through the campus, and tie the various places and spaces together. There are informal park-like areas of trees and turf where one can sit on the grass, eat lunch, feed the squirrels or simply walk through.

Many other factors affect the plan at the design level. Planting is functional as well as decorative. Plants have beneficial effects in purifying the atmosphere and reducing air pollution. They improve local climate by screening out wind and blowing snow and providing shade for paved areas. They provide a strong unifying element along streets and major pedestrian routes. The design of lighting and



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grounds furnishings, such as benches, building signs, notice boards, is important in terms of efficiency and visual unity. The question of upkeep is a major design factor and the organization and design of such practical details as paths, planting turf, drainage and irrigation, coupled with an adequate maintenance programme, is an essential element.

The foregoing remarks are an attempt to illustrate the involvement of the landscape architect in the planning and design of the university environment, which is in many respects representative of his work both on a larger and a smaller scale in other areas. Thus the programme of studies in the Division of Landscape Architecture at the University is aimed at introducing the student to some of these facets of the profession.

The landscape architect must, today, be concerned with the design of land on a regional as well as at a local scale, which includes study of recreation, land reclamation, the impact of industry and urban uses on the landscape. He must be able to carry out site analysis at all scales, and realize the design potential of various types of landscape. The programme includes courses in physical and cultural geography, history, botany, ecology and other subjects that will contribute to an understanding of the landscape from scientific and cultural points of view. Similarly, studio problems, planting design and courses in materials and methods of construction emphasize the design of spaces on various scales, the use of brick, stone, wood and other materials, the techniques of modifying local climate and the uses of plant materials. Above all there must be an understanding and respect for the work of allied professions such as architecture, engineering and related disciplines.

The planning and design of our modern communities can no longer be the responsibility of a single individual or profession, but of a co-ordinated team, each contributing a part to the overall plan. The landscape architect has a growing concern for the improvement of our physical surroundings and the wise use of our natural resources. He has changed from the horticultural dilettante of the 19th and early 20th centuries to a professional with a contribution to make to the contemporary scene.

Landscape Architecture at University of Toronto is a four-year course leading to the degree of Bachelor of Landscape Architecture. Information concerning admission requirements, curriculum and career opportunities may be obtained on request from the Division of Landscape Architecture, School of Architecture, University of Toronto, Toronto 5, Ontario.



University of Toronto Press Printing Plant, completed Spring 1966

Erindale College, first building, to be completed August 1967



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"Television," wrote President Claude Bissell in a recent Annual Report, "should be thought of as an integral part of instruction. It is not a means of reducing the cost of education." The medium has proved its value at the university level — particularly in Varsity's Faculty of Dentistry where programs have won the admiration of Dean Roy Ellis, the students and staff. It will be used on a broader scale at Scarborough where our new College promises to be a hive of electronic activity.

Late in October, as Minister of Education for Ontario, the Hon. William Davis submitted a brief on educational television to the Board of Broadcast Governors. He recommended an ETV network using the ultra-high frequency band, urged study of a space-satellite communications system, asked for a law requiring all new tv sets to be equipped for UHF reception.

What *is* ETV and how does it work? For an answer we turned to one of our graduates, the highly articulate Supervisor of Secondary School Television for the Metropolitan Educational Television Association of Toronto.

Television in Education

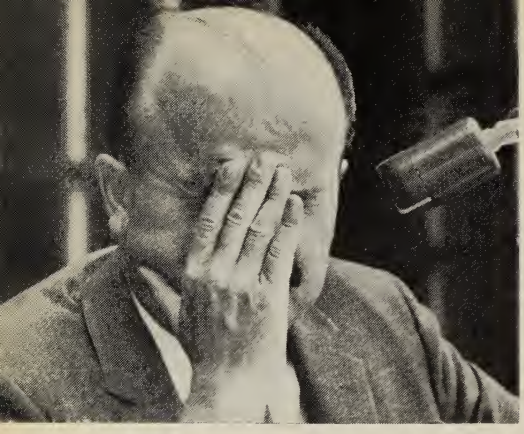
AN INTERVIEW WITH ELWY YOST

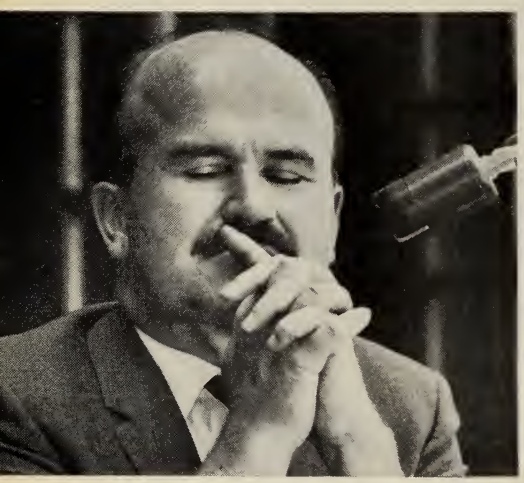
As our topic could embrace several themes, Mr. Yost, let us begin with your particular world within META. What subjects of study concern you? What is your constituency?

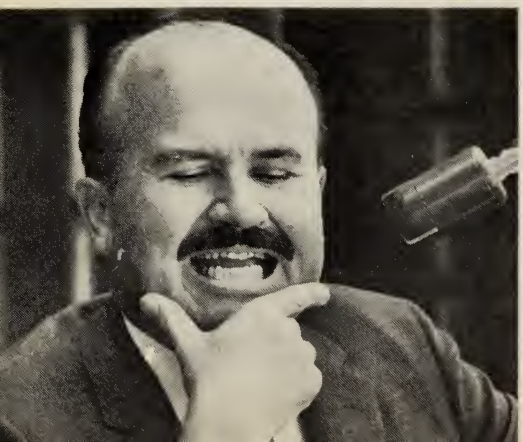
We do programs in English, history, geography, mathematics and science. This year I'm responsible for 93 programs in those areas. We deal with 147 secondary schools in Metropolitan Toronto.

It's a demanding but rewarding job. We are hoping to expand our secondary school coverage in the future — and I must emphasize that I speak only of secondary schools. They're my world. We might go into the languages, perhaps French, German, Latin. I think of such areas as physical education and home economics. We have a great potential in science and technology.

Educational television would be a great aid in teaching shorthand, typing, business methods. These subjects may not be the most challenging and exciting to me, but they are important. Such things







will come when we have the budget. So far we've got to 93 programs. I think we've done quite well.

You've solved the teacher shortage?

Oh, I know some people think educational television will do away with classroom teachers. Nothing could be further from the truth. Without a teacher in the classroom, the marriage of minds, without this, young people aren't going to learn. Television can be a magnificent, versatile, explosive ally of the teacher. Without her it's useless.

A lot of good teaching has been done without it.

Ah, yes. But we are victims of fantastic change, creatures of fantastic change. Bill Blatz, a professor I revered, stressed that when I was at college in the 40s. Change is a dynamic force in our lives. You are familiar with estimates of how scientific knowledge has been doubling and re-doubling every stated number of years. Consider the population explosion, what has happened in communications. We got along fine with dirt roads in the Victorian era; today, our lives would not be what they are without super-highways and cargo aircraft. In the Victorian era, a teacher with a tool called a textbook could do an efficient job. Today a textbook that's fine at the beginning of a decade can be hopelessly out of date long before it ends. The teacher needs tools that meet the demand of the times.

But why television?

Television has much to offer as a teaching tool. I think first of its power

to create a sense of intimacy. The head on the tv screen in the classroom (or in your home) is about the same size as your own. The tone of voice is much like yours. The effect is much like a conversation, so different from an actor on stage projecting his voice so he will be heard in the back row, and making broad facial and arm gestures, too. On television



In August, Elwy Yost, *right*, returned to his University to talk about television's potential in education. Here in Hart House quadrangle he is welcomed by his host, George Boyes, director of the Division of University Extension, for a noonday discussion before an audience of shirt-sleeved summer students, many of them teachers accumulating credits for degrees. Mr. Yost brought with him a META colleague, Miss Elaine Weekes, who asked leading questions at appropriate moments. This successful event led to the article published in this issue.

Elwy Yost, whose words on educational television enliven these pages, has a University of Toronto B.A. won in the honour course in sociology in 1948. As a student he did freelance writing, played with two professional theatre groups, the Vagabond Players and the Forest Hill Players, and with other students made a motion picture. Titled "In Between", the film was shown by the University of Toronto Film Society in 1948. The Canadian Film Institute recently asked for a print that will be preserved as a pioneer work. After graduation, Mr. Yost tried his hand at journalism on a daily newspaper but found himself unable to resist the pull of education and became a teacher of English at Burnhamthorpe Collegiate, Etobicoke, in 1959. Five years later, he was converted to the idea of teaching by television and joined the Metropolitan Educational Television Association of Toronto where he is now the Supervisor of Secondary School Television. He is a regular panel-member of the CBC-TV program "Flashback". Because of this extra-curricular activity, the beaming countenance of Elwy Yost has become one of the best-known teachers' faces in the country.

what the person is saying becomes much more believable.

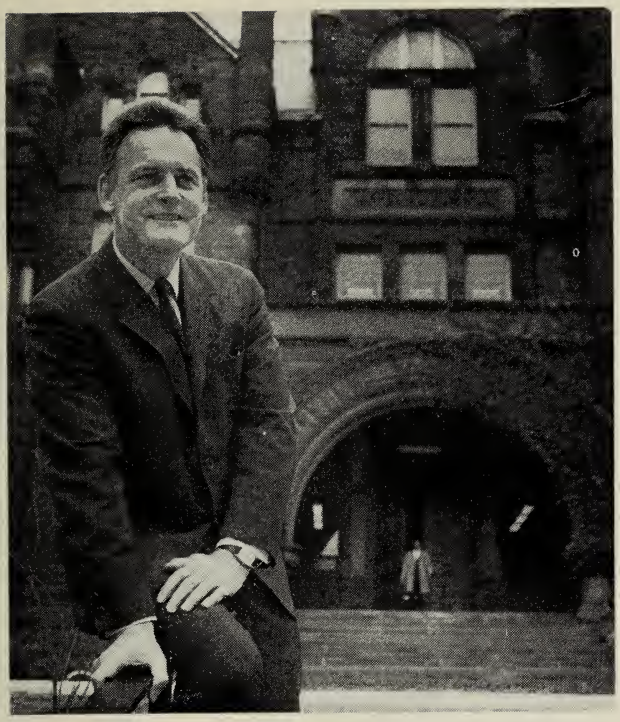
At the heart of the medium is magic. It may sound naive to state something you know as well as I — but I must make the point. At the heart of motion pictures there is no movement. You watch a succession of still pictures flashing on the screen a fraction of a second apart. The illusion is even greater in television because a machine-gun spray of electronic bullets is bringing a new picture in at the top of your screen as the previous picture leaves at the bottom. It's all done up here: it's all in the mind. At the turn of the century, George Melies, the French film director who loved fantasy and made "Trip to the Moon" and pictures like it, said "thou shalt deceive" was the first law of the cinema.

I don't think either the film or television should be used to deceive in a real sense. We should teach our young about the magic of these media so they won't accept without question everything they "see". But all the tricks of the cinema should be used *to create truth.*

Then there is the tremendous immediacy of television. Something happening half-way around the world can be pictured in the schoolroom, or your living room, as it happens. In Marshall McLuhan's words, we are living in a global village. And television is our main street.

Flexibility is another television strength. Suppose there were a significant discovery in biology: it could be dealt with by educational television next day. Television is versatile. It

(Continued on page 118)



Victoria's Principal-Designate

TWO ASPECTS of his appointment as Principal of Victoria College give Professor John E. Hodgetts particular satisfaction: he will be returning to his undergraduate college and he will continue teaching in the department of political economy.

"For a social scientist like myself the position has an added attraction," he said recently. "This is a critical period for the older colleges that have to be fitted into a federal system in which the new colleges are, as I see it, being associated with the University

in a somewhat different way. Just as co-operative federalism have been key words in seeking adaptations in the larger political sphere, so it seems to me they become the basic concept in developing and adapting relations between the colleges and the University proper."

John Hodgetts, M.A., PH.D., F.R.S.C., takes up his new duties January 1 when Dr. Northrop Frye becomes the first University Professor at University of Toronto. (Dr. Frye will continue to teach English at Victoria while serving the University as a whole).

Professor Hodgetts entered Victoria in 1935. He won a number of scholarships and prizes, was quarterback of two Mulock Cup teams and President of the Victoria College Athletic Association. He graduated in 1939 with the gold medal in political science and economics and was awarded a Rhodes scholarship.

A year later, with a Toronto M.A., Ted Hodgetts moved to the University of Chicago to work for his Ph.D. He was back in Toronto in 1943 as a lecturer in his old department and, in '45, to the first batches of returning R.C.A.F. men.

Dr. Hodgetts joined the Department of Political and Economic Science at Queen's University in the fall of 1945; he completed his Ph.D. in 1946 and was appointed full professor in 1956. Later he became Hardy Professor of Political Studies and head of the department.

Teaching at Queen's was spiced with one of the first two travelling fellowships in social sciences at Nuffield College, Oxford—"my surrogate Rhodes Scholarship," he calls it. (He had a further year there, on a Canada Council fellowship, in 1962.) "Nuffield is a place where two worlds meet, the active and the academic worlds. It gave me something that enabled me to penetrate the medieval walls of Oxford's collegiate society and make lasting personal friendships useful to me and to my own students, many of whom I have directed to Nuffield for their graduate work."

In 1960–62 Dr. Hodgetts was editorial director of the Glassco Commission; he was elected a Fellow of the Royal Society of Canada in 1962. Last year he rejoined the staff of the University of Toronto.

Among his publications are *Pioneer Public Service: An Administrative History of United Canada* and *Administering the Atom for Peace*, commissioned by UNESCO and the International Political Science Association. With Principal Corry of Queen's he wrote the third edition of *Democratic Government and Politics* in 1959. For three years he was editor of the *Queen's Quarterly* and, as editor of Section II, has recently edited for the Royal Society the volume in the Studia Varia series entitled *Higher Education in a Changing Canada.*

Dr. Hodgetts was married in 1943 to Ruth Woodger, daughter of the late Rev. W. P. Woodger, an honorary D.D. of Victoria University. They have three children, Ted Jr. in second year at Victoria, Geoffrey in second year pre-med, and Anne, at St. Mildred's College.



Miss U of T for 1966

Miss University of Toronto—Sharon Price—was a special attraction at the Homecoming Weekend float parade. Cheerleaders representing Physical and Health Education, in which Miss Price is a fourth year student, provided an appropriate background. Four "princesses", finalists in the Blue and White Society's Miss U of T contest, were also in the parade. They were Joy Davey (Victoria), Roberta Jong (Medicine), Mary Prior (University College) and Mary Ross (New).

Our new Dean o

Dr. A. L. Chute, paediatrician, battlefield physician, authority on diabetes, has become Varsity's Dean of Medicine, succeeding Dr. John Hamilton, now Vice-President for Health Sciences.

Recently we talked with the new Dean about the score of departments under his supervision. *Which offers the best base for an understanding of medicine as a whole*, we asked; *would you say paediatrics?*

It's an excellent field, *he replied.* The days when each home had its

Dr. A. L. Chute, Varsity's new Dean of Medicine



Medicine

"family doctor" have gone. But there must be someone for the children: it is to their paediatrician that adults in the household often turn when they need help for themselves. He is becoming the family counsellor. As a rule he can't do more than advise. There is such a shortage of paediatricians that most go directly into consulting. I might add that internal medicine is a good beginning for anyone planning a general practice. Our responsibility towards the family has a high priority. Units concerned with family practice have been established in three of the Teaching Hospitals — Toronto Western, the Wellesley, Toronto General.

Isn't the G.P. a vanishing breed?

He hasn't gone, he's just different. The world is changing and the G.P. with it. The family doctor who would do anything — operate for hernia, take out an appendix, do surgery for which he wasn't adequately trained — he's gone, or going. Other vistas have opened for him. About half of the patients who come to him with their pains now are disturbed people worried about home life or their job. To serve his community a doctor needs more training in diagnosis, in psychology, sociology.

Is there any answer for the doctor-shortage in rural areas and the small Ontario towns?

No matter what we do, there will be a shortage of doctors for the next



Dr. John Hamilton, Vice-President for Health Sciences, holds a simple model of the present Medical Building. Model of the new medical sciences complex (white blocks, foreground) is in the same scale.

15 or 20 years. There just aren't enough doctors to make house calls on the old scale. But the vast improvement in transportation is a compensating factor. With medical centres in the right places, patients can get to the doctor without hardship. This has been demonstrated in the United States. In some parts of Ontario, communities are smaller and more widely separated than in the U.S., but medical centres can go a long way towards solving our problem, too.

Should medical students be paid?

We feel something should be done for those in the last two medical years — certainly in the last medical year.



Dean Lawrence Chute

As matters stand now, the medical student is at a disadvantage compared with students in the Graduate School, many of whom get junior teaching appointments. We hope to find a solution.

Will standards suffer as enrolment rises?

The danger is there, of course. But we'll maintain standards if we can get a sufficient number of good teachers on the staff. There are other things we can do — for example, subdivide the student body in such a way that no individual will feel lost in the crowd.

Will Sunnybrook help?

Every university with a hospital under its complete control has derived great benefit. I am sure that will be our experience with Sunnybrook Hospital. The present Teaching Hospitals remain indispensable allies but other commitments make it impossible for them to perform all the functions of a University Hospital.

Andrew Lawrence Chute, O.B.E., M.A., M.D., PH.D., F.R.C.P.(C), was born in Southern India in May, 1909. His father was a missionary and his mother a physician. He studied at the Central Technical School in Toronto and at Harbord Collegiate before coming to Varsity. He gained his B.A. in the honour Science course in 1931, together with Victoria College's Silver Medal and then went on to get his M.A. in Physiology in 1932 and his M.D. in 1935, again with a Silver Medal.

Dr. Chute interned in the Toronto General Hospital, 1935–36, and held a residency at the Toronto Hospital for Sick Children, 1936–37. He gained the Beit Memorial Fellowship there and went to University College, London, to obtain his Ph.D. in Physiology in 1939. Nine years later, he was elected a Fellow of the Royal College of Physicians of Canada. In the meantime, he had served with distinction in the Royal Canadian Army Medical Corps in England, Egypt, Italy and Germany, commanding No. 1 Canadian Research Laboratory from 1943–45.

His research interests during the war period were chiefly with physiological problems of tank warfare (heat stroke, ventilation, protection against chemical weapons and against the risk of extensive and fatal burns when tanks caught fire), and, later, with problems arising from loss of blood from wounds and wound infections. He believed the proper place to do such research was on the battle-

(Continued on page 132)



DEPARTMENT HEADS ON CAMERA (II)

Six Changes in Medicine

Photography by Bob Lansdale, except for Michael Milne's study of Dr. Drucker on page 31. Text by Winogene Ferguson.

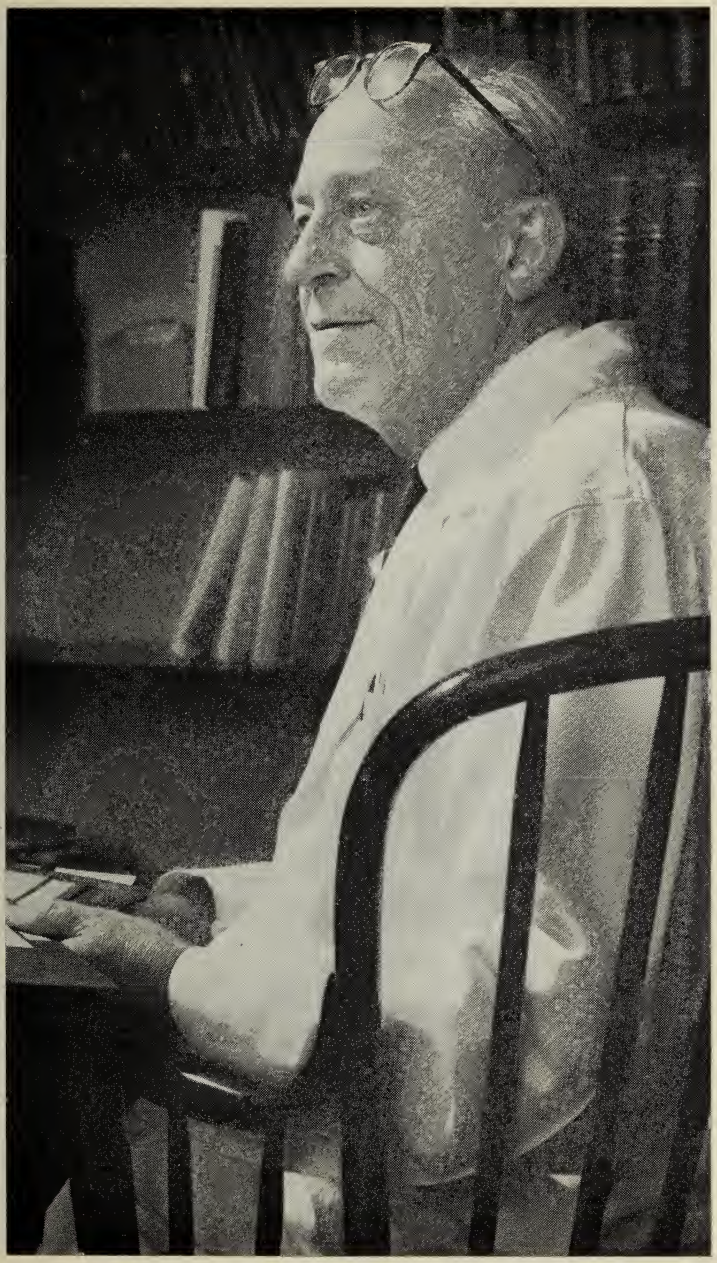
Harry W. Bain, who succeeds Dean Chute as Head of the Department of Paediatrics at University of Toronto and Chief of Paediatrics, Hospital for Sick Children, is one of six department heads appointed in the Faculty of Medicine since Varsity Graduate published its first portfolio of this nature in the spring. Dr. Philip H. Greey (page 27) was on leave when the earlier pictures were taken.

A U of T graduate, Dr. Bain interned in Toronto General Hospital before being appointed doctor on a troopship. He took postgraduate training at the Hospital for Sick Children and the Winnipeg Children's Hospital. After a year as consultant in Sudbury, Dr. Bain joined the Hospital for Sick Children staff. His main interests have been in the clinical aspects of diabetes and other endocrinological disturbances of body chemistry.

James S. Thompson, *below,* appointed Chairman of the Department of Anatomy this year, is a graduate of the Universities of Saskatchewan and Toronto. He served in the Banting and Best Department of Medical Research and in the Department of Anatomy here, then as Associate Professor and Assistant Dean of Medicine, University of Alberta, returning to Toronto in 1963. His research interests are primarily in genetics and its relation to the production of anatomical abnormalities and heart disease and to organ transplantation.

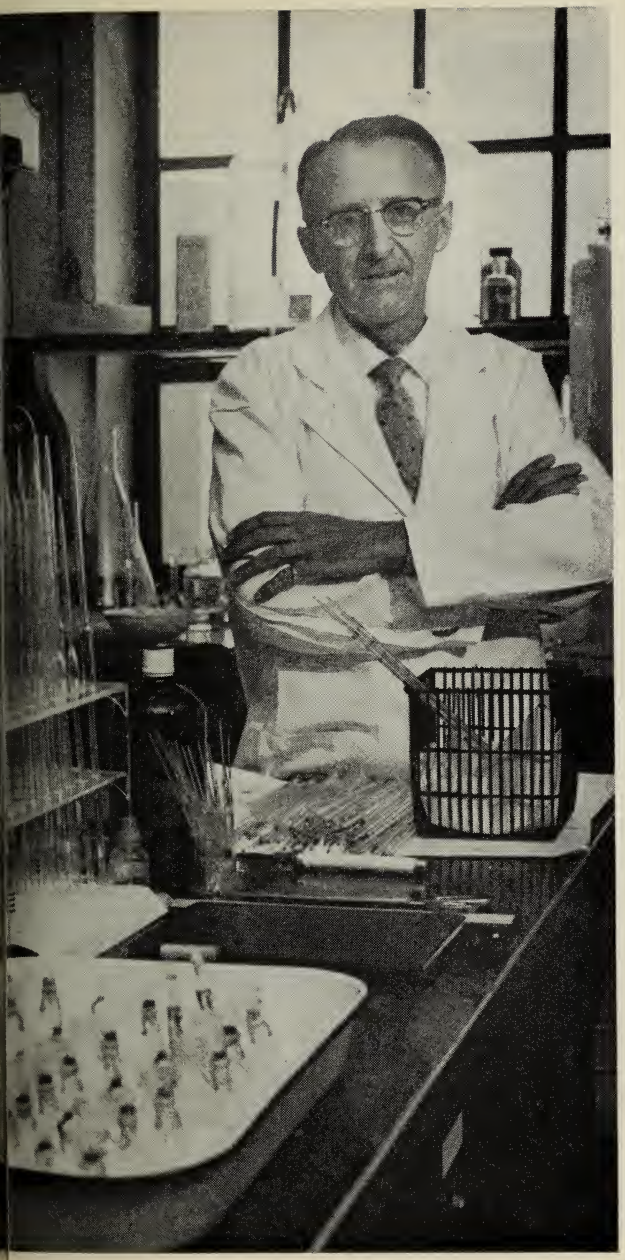


Philip H. Greey, *right,* Head of the Department of Bacteriology, is also Consultant to three hospitals. In 1943, as Consultant in penicillin production, Connaught Medical Research Laboratories, he produced the first therapeutic penicillin made in Canada, and supplied the drug for almost a year to urgent civilian cases, with the support of the National Research Council. From 1951–61 Dr. Greey was on the WHO Expert Advisory Panel on Antibiotics. In 1959 he was first president of the Canadian Association of Medical Bacteriologists.



Douglas P. Bryce, appointed Chairman of the Department of Otolaryngology, is also Otolaryngologist-in-Chief, Toronto General Hospital, and Consultant to Sunnybrook, Princess Margaret, and Wellesley hospitals. A graduate of this university, he served during the war as medical officer with the Argyll and Sutherland Highlanders. Dr. Bryce became a Fellow of the Royal College of Surgeons in 1949, and is a member of several Canadian and United States societies. His research interests are carcinoma of the larynx and hypopharynx.

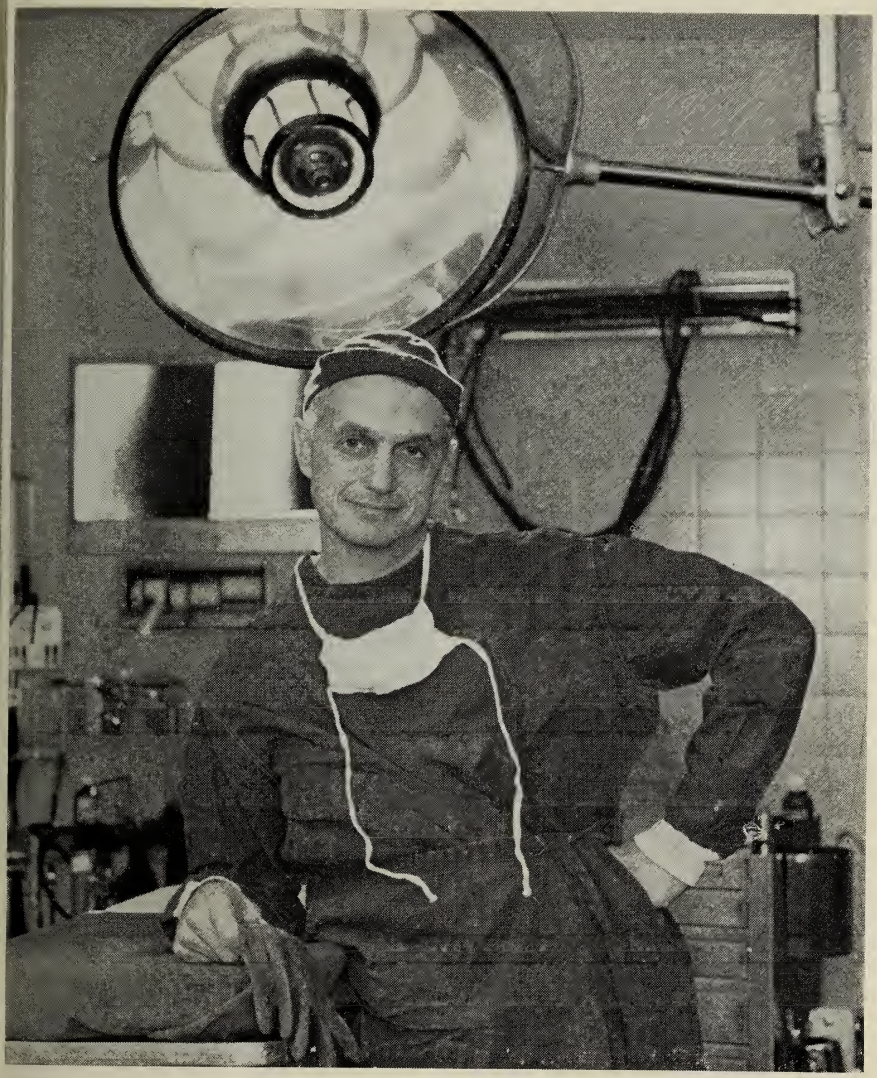




Allan Gornall, appointed Chairman of the Department of Pathological Chemistry this year, is a graduate of Mount Allison and Toronto. He held posts at both institutions before joining the Naval Medical Service in 1942. Later he lectured at Dalhousie University, and then joined the Department of Pathological Chemistry here. In 1949 he was a Nuffield Scholar in Edinburgh and London. Dr. Gornall's main areas of research interest have been hormones and high blood pressure. He was recently elected a Fellow of the Royal Society of Canada.

Werner Kalow, *below,* newly-appointed Chairman of the Department of Pharmacology, was educated in Germany. In 1946 he began general practice in Berlin and then joined the Department of Pharmacology at Humbold University there. In 1948 he transferred to the newly-founded Free University of Berlin and a year later went to the University of Pennsylvania, coming to Toronto in 1951. Dr. Kalow is interested mainly in biochemical problems and particularly those situations in which genetic factors modify response to drugs.





William R. Drucker, *above,* has been appointed Chairman of the Department of Surgery, and is also Surgeon-in-Chief to the Toronto General Hospital. Educated at Harvard College and John Hopkins University, he saw active service with the U.S. Naval Reserve. Since 1954 Dr. Drucker has been with Western Reserve University and University Hospitals of Cleveland. Dr. Drucker has been active in the American Federation for Clinical Research, Cleveland Academy of Medicine, Cleveland Surgical Society, American College of Surgeons and many other organizations.





Above: Two weeks after officially opening Scarborough College, Hon. William Davis studies controls of an earthmover before turning the sod for Erindale College. Encouraging him is the Vice-President for Erindale and Scarborough Colleges, Dr. D. C. Williams. Photograph at *right* of Dr. Williams with President Claude Bissell is flashback to a Scarborough College preview.



The U of T design team for Scarborough:

Michael Hugo-Brunt
Town Planner

John Andrews
Architect

Michael Hough
Landscape Architect

Project architects were Page & Steele in association with John Andrews.



PRINCIPAL PLUMPTRE: "WE'RE SPECIALISTS IN GENERAL EDUCATION"

A College Is People

IT BEGAN with a report from the Plateau Committee, a group of realists appointed to study forecasts of a coming undergraduate explosion (which exploded on schedule) and chart a course for University of Toronto. One of their many proposals that won support from the University's Governors and the Government of Ontario called for new U of T colleges many miles from the St. George Campus. The first of these would be in Scarborough.

In the fall of '62 an academic planning committee was formed. For chairman, Dr. Claude Bissell's choice was D. Carlton Williams, Professor of Psychology, Director of Extension, a leader in educational television — in the President's words, "a tough-minded pioneer".

Out of these deliberations evolved the outline for an academic plan having a strong sense of identity with the rest of the University, yet encouraging innovation (e.g., more teaching by tv).

The drive became two-pronged when Dr. Williams came up with a three-man design team from the School of Architecture (*facing page*). Frank Stone, Vice-President (Administration), and Frank Hastie, Director of Physical Plant, (*below*) pushed the building operation. Dean W. E. Beckel, and later principal A. F. W. Plumptre pressed on with academic organization. On October 4, 1966, the Hon. William Davis, Minister of University Affairs, declared the College officially open.





Scarborough College

On 4th of October, 1966, Scarborough College of University of Toronto was officially opened by the Honourable William G. Davis, Minister of University Affairs for the Province of Ontario. Dr. Omond Solandt, the Chancellor, presided. Dr. Claude Bissell, President of the University,



A PHOTOGRAPH FOR VARSITY GRADUATE BY KEN BELL

niversity of Toronto

and Principal A. F. W. Plumptre of Scarborough College spoke. The guest speaker was Dr. Douglas M. Knight, President of Duke University, Durham, North Carolina. All University divisions were represented in the academic procession. This photograph was taken a few days later.

In this night view, Bob Lansdale reveals another exciting aspect of the College buildings, then brings the focus back to people — some of the Class of 1969. The initials SCSS stand for Scarborough College Student Society.



EXPLORATIONS

EXPLORATIONS

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The cost of printing this issue of *Explorations* is being contributed by the Associates of the University of Toronto, Inc., New York, on behalf of the University of Toronto alumni living in the United States.

A BROTHER TO ONE INTELLIGENCE

"A Dirgy-Ode to the Sun"

I

A shaving from your fingernail, has shot
the azure cool,
Refracting into a shaft, that spreads vermilion
Upon the coral world,
Oh, brother sun!

THE SUN AND THE SENSES

Note Appended to the Poem

Ordinarily mankind, largely unaware from the cradle to the grave, accepts the environment passively, obliviously. But there is a certain star of the third magnitude, an irremovable fixture in our universe, whether geo- or heliocentric or spinning outward eccentrically, which has commanded concentrated awareness since man first lifted up his face: the Sun. Gods were named for it: in Mesopotamia Shamesh; in Egypt Re; in Greece and Rome Apollo. Religions and priesthoods followed: in Egypt worshipping the sun disk, Aton; in Persia Zoroaster. Breathtaking temples were built to it at Heliopolis, in Athens and throughout the worshipping world. A cosmogeny was fathered by it; also a kingship: le roi soleil, the mikado. A people were named for it: the Inca

II

There, stand revealed and waft in langrous motion,
Creatures of the cave; and relics of Ra illumined
By the dawn of consciousness,
Oh, brother sun!

III

The Serpent of the underworld, all black
but for your wasting battery,
Shapes his silvery scales into questions,
unanswered:
Whence comest thou, and art thou alone?
Oh, brother sun.

IV

By what explosive miracle, eons ago,
Became you enthroned the arbiter of all our motion
From dawn to dusk and life to death?
Oh, brother sun.

V

By whose consent stored you the power
that will sail the inter-stellar ship,
While you dry and age our rocks another million years,
Preparing the re-entry of our own intelligence,
a half a century older and no wiser?
Oh, brother sun.

Children of the Sun; and territories called "the lands of the midnight sun". Observatories traced its course 10,000 years ago at Stonehenge. Rites were centred on it: the Semitic and sensuous Astrarte; others: Attis, Dionysus. Stories glorified it, the morning sun: Prince Charming; others horrified Daedalus and Icarus. Objects symbolized it: the soul-bird, the power-bull, the tree of life and death; others symbolized its obverse: seaweed and nocturnal serpents.

Heaven is flooded by the sun and hell smothered by its denial. Music was written for it, directly or indirectly, viz. The Magic Flute and dances choreographed: the Sleeping Beauty. And sacred paintings and sculptures were hidden from it in Buddhist or Zen temples, or the Altimira caves, in windowless churches, and some rituals shut it out among the Navajo tribes or in Nigeria. Houses in California rotate to soak in its rays. Science has studied it throughout

VI

Or will you be put to shame,
When extragalactic Odysseus returns from Andromeda,
With news of bigger brothers to mightier intelligences?
Brother sun!

VII

When you installed yourself divider of our Universe,
What Prometheus stole for you the elemental fire
That burns like a child, before it cools to
molecule and matrix,
To form procrustean bed?
Oh, brother sun.

VIII

And, like a child, imploding matter out of doors,
you vent your rages
Into space spanning flames,
Deafening the flapping ears of our radio telescope;
While we, indoors, listen to the whisperings of the
Universe,
Telling tales of our past and future.
You disturb us!
Brother sun.

IX

And then again we, like frightened children,
Dread the eclipsing of your brotherly, fatherly,
motherly face,
Foretelling your premature death and ours;
Brother sun!

the realms from atrophysics to the biology and biochemistry of photosynthesis and phototropism. The rhythm of our own biological life and even our social life is hinged on it, day and night. It has been our main source of light and heat and, indirectly, of food. Presently we shall harness a little more than a fragment of the millionth part of solar energy dissipating itself on our backs and hats.

But what is our intimate perception of the sun? And what is our contemporary emotional reaction to these percepts? How does it affect our sensory lives? Well, when we fly like Icarus, against the rising sun, we get dyschronosis—the time feels out of joint. When we land, we become dystopotic—the place seems out of joint; and dyscercadic—we feel out of phase. In other words, it affects deeply our spatio-temporal orientation, as it does our biological rhythms, especially that of sleep. In the desert, and in the cauldrons of masonry in New

X

Soon enough, your young genes will draw the fire
Into the cooling frame of manhood.
And you'll grow old like us and decay,
So that other sons may rise on your ashes,
Oh, brother!

XI

In the light of your shadow, the Yang
and Yin are born,
That tear the human heart.
A man like you, a woman like your sister,
Joined in the twilight, separate on your rise,
Brother sun!

XII

From you we learnt, at the horizon, sealing our
fate to yours,
The dreaded splendour of incest, covered in redress,
then crowned in royal purple;
As you tumble your sister, then pierce
through the lengthening arms of your mother,
Brother sun.

York, it feels as cruel as the turned down corners of Apollo's mouth. Victorian ladies, like the depressed and the migrainous, were photophobic; only labourers were bronzed. Australian diggers and much of the middle class, cannibalizing the rest, in the getting-affluent-world, are photophilic, while the Asiatic Indians and the Africans are waiting for the boon of air-conditioning. None but the insensitive fails to be awed, thrilled and deeply moved in proportion to the magnificence of the setting for the rising or departing sun. And Frank Lloyd Wright built himself a church on a rock overlooking the Pacific where the sun transillumines whenever it smiles on Californians. No, that isn't quite it! What does the sun do for us sensorily? Its pathways are clearly visual and tactile-thermal. Visually, it provides colours, brilliance, beauty, effects of shades, contrast with darkness, after-images. Yet it rarely penetrates, as such, the

XIII

From you we took the cheery clown to laugh with
And the chilly cloak with which we wrap
    our graves.
They're yours to give and yours to take away
Oh, brother sun!

XIV

But for your cruel desert we would never know
    the warmth of Eskimo love.
Nor would your children play in the temple
    priested by a bull,
And dry on a line like fishes, staple food
    for the Japanese Baal
Oh, Dog-star, cannibāl!

XV

While you go the way Copernicus sent you,
    to waste your strength,
You leave us to conserve your borrowed muscle,
    in the belly of darkness;
Only to thresh about in the morn,
Under your cynical smile, brother!

screen of contemporary sleep-dreamers, except when it shines sometimes upon the creature-emptied canvas of schizophrenic dreamland. As any yogi knows, it punishes with blindness those who dare expose their naked eyes to it. Like Yahweh, the non-anthropomorphic sensation of Judeo-Christian deity must not be looked at straight in the burning bush. Those who peep briefly, unlike the scoptophilic Tom, are rewarded with gorgeous, orangey after-images when it is very hot; and bluer ones when it is very cold—a pretty effect of thermo-visual sensory interaction.

Its thermal, skin-toning effect is quite dramatic. The modern sun is sensuous. On the bikini-exposed beaches, it is downright erotic. Always, in the copulating spring, it turned a young man's fancy. Nobody is quite sure what it did or does to young ladies; but weddings are most common in the early summer. Whether,

XVI

You lend a hand to turn our dial
And sweep the cobwebs clean.
But the dial runs on, and on, and on;
And the cobwebs gather again
Behind your wreathing, weathered face,
Oh, brother sun!

XVII

For He who gave you license to produce the show,
Ordained the dawn of spring into a beginning;
Set the noon of summer to the height of action
And flagged the evening of autumn
    into the lysis of this divine plot.
So that, in the long night of winter,
    you will find rest;
And we, the oblivion that is a prelude
To the memory which powers rebirth.
And so that we might circle together,
    from the future, to the past,
And into a new beginning,
Brother sun!

now that sex has come out in the open, the sun's seasonal appearance and weather affect the frequency and intensity of coitus or not, is something for Dr. Kinsey's successors to investigate seriously. One easy index might be a frequency rating of the populations' date of birth, and nine fingers to help arithmetically in antedating this event. Though we are trying to break the out-of-doors, in-doors barriers, and in spite of Freud, I doubt that the sun actually brings sex out of the enclosure, as much as it did in the days when haystacks were more private. Certainly heat varies inversely with passion. While on the kick, it is worth noting that the glory of the sun in springtime and beautiful summers depress the depressed. But it is doubtful that the prolonged appearance and warmth of the sun raises the suicidal rate, across cultures. For the westerner, winter seems to be the lethal season. The other individual, discreet senses are

XVIII

Unless, oh, unless
You betray us
Into betraying you
Oh, brother sun!
Then, how shall we know you?
Brother sun!

affected indirectly: sounds from the radio telescope and radios registering the flare ups or sun spots or the chirruping of returned migratory birds; smell: the drying earth, and hay for fever, and it tickles the nostrils and causes the evil spirit to be sneezed out and the friend to therefore wish the sneezer prolonged health; taste: from thirst, gin and shandy; movement: the greater freedom from clothes, and this has a visuo-tactile erotic feedback almost exclusively to male eyes. For the fortunates who live under the benign rule of a temperate sun, there is little doubt of its magic, healing propensities, whether combatting tuberculosis in sanatoria or helping those who struggle with the evil darkness of other diseases and manage to emerge into the solarium. For them, as for us, the sensory effect is total—coenesthesia—an invigorating, rejuvenating well-being that gives the illusion of energy soaked up, so that one may battle through the dark human underbrush and survive to see another day in the sun.

XIX

In the coolness of the womb
How shall we know you're there?
Brother sun!
In the bath of solar heat
Who'll worship at your feet?
When the chirruping's on tape,
When we imitate spring's shape,
When the skin is bronzed and red,
When we sleep no longer 'n bed,
And the smell of drying mud
Erzatz hail, hoofing with thud,
When we poke our tongues and mock
Your unnecessary clock;
When we taste cornucopia
In an ordinary pharmacia;
How shall *we* know you're still there,
Brother sun?

XX

Oh, we know you ripened corn,
Made our weather, called the morn',
But if Joshua blows his horn,
You'll be dead,
Brother sun!

What will happen to this enormity of effect, physical, biological, sensory, perceptual and emotional, when future technology intervenes and in part replaces the unique, dramatic and direct effects of the sun, one can vaguely guess. With complete temperature control under a city dome; with diffused light to turn darkness into an artificial day; with melanin injections to bronze the skin (or the antidote to dissolve some pigment for our problem children); with food synthesized; and with the planet brushed up to look a pretty technological device for the astronauts and the lunar emigrants looking back, the sun will become an antique. I think the most dramatic effect will be a change in diurnal rhythms, especially the human rhythm of sleep and vigilance. This will lead the way to a psychosocial revolution. As for the sun, I think we'll can it.

Dr. Daniel Cappon, M.B., F.R.C.P., *Assistant Professor of Psychiatry, U. of T.*

WHY DO PEOPLE SCREAM?

This paper will attempt to examine screaming as a social fact.

The first hypothesis is: *To the degree to which a group of people is characterized by the use of "public language" in a culture, the people in that group will use loud language or screaming to communicate with one another: to the degree that a group of people is characterized by the use of "formal language," the people in that group will not use loud language or screaming to communicate with one another.*[1] (See footnote 1 for definitions of terms.)

In further explanation of the hypothesis it is postulated: Individuals tend to raise their voices or scream because they cannot communicate at the ordinary conversational tone. This is extrapolation from Mead.[2] This derived postulate includes the assumptions that (a) screaming is a form of communication; (b) screaming is linked with public and formal language. Corollary to this is that the link is stronger with the public than with the formal language.

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1. A. BERNSTEIN, B., "Some Social Determinants of Perception," *British Journal of Sociology*, Vol. 9, No. 2, June, 1958. Bernstein defines *public language* as language characterized by simple, broad, concrete categories, umbrella expressions and non-abstractions. *Formal language* refers to the use of words referring to concepts or abstractions, as opposed to things. *Expressive symbolism* designates the use of gestures, tone of voice, loudness or softness of speech, symbols *other than* words which express meaning in communication. Loud language and screaming are types of expressive symbolism. Bernstein calls expressive symbolism a third kind of language, in addition to public and formal. *Communication* as used here follows the symbolic interactionist theory of George Herbert Mead.[2] It consists of (1) speech, thought, gesture or symbol of the actor addressed to the other; (2) reception of (1) by the other; (3) completion of the gesture by the interpretation by the other, and indication back to the actor that completion has taken place, either by verbal or other response.
2. MEAD, GEORGE HERBERT, *Mind, Self and Society*, Chicago, University of Chicago Press, 1934.

The hypothesis could be applied to any cultures or subcultures thought to display as characteristics the variables mentioned. For simplicity and clarity this discussion is limited to literate cultures.[3]

We shall attempt to apply the hypothesis first to the English culture, in particular, the middle and working classes as subcultures.[4]

Bernstein, using the linguistic approach, examined the differences in middle and working class boys. He found that the level or type of language determines and limits the character of thought that takes place. That is, the working class boys who were limited to public language and expressive symbolism were relatively limited in their abilities to convey meaning, manipulate ideas and make distinctions, whereas the middle class boys who commanded all three types of language, public, formal and expressive symbolism, were better able to convey meaning, as evidenced by performance in school.

If public language and formal language are separately linked to class, working and middle respectively, perhaps the character of the expressive symbolism used helps to explain the difference in class. If it is true, as assumed, that people raise their voices or scream because they cannot communicate at the ordinary conversational tone, then those people who command only simple, non-abstract, emotional categories to express their thoughts will have less categories to choose from, as the number of words available for concrete things or experience are limited in the English language. It will be hard for the other to interpret the gesture for the same reasons, and they therefore will call upon screaming or raising the voice as an aid to communication.

On the other hand, where formal language is used, the abstractions are numerous and the symbolism is of many possible varieties. If communication fails at first, the almost limitless combination of words to express concepts or ideas possible in English can be used. The other, having command of these same abstractions by virtue of sharing the same subculture, will more likely understand, and communication will be completed. The likelihood of loudness or screaming occurring will be less.

In the family, in the early years when it is necessary for socialization to attach meanings to the physical world and activities for the child, much communication takes place with concrete objects as referents, regardless of class.

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3. For a definitive statement, it would of course be necessary to analyze the phenomenon in many cultures, both pre-literate and literate. In a communication to the writer, Marshall McLuhan suggests consideration of the effects of literacy on vocal behavior. See his *The Gutenberg Galaxy*, University of Toronto Press, Toronto, 1962, for this exciting and provocative approach.
4. The concept of culture used in this paper is that taken from Ruth Benedict, *Patterns of Culture*, Mentor Book, New York, 1959. That is, culture is considered as learned mode of behavior transmitted from generation to generation. Cultures have "patterns" or central themes which effect "patterns" of behavior in the people (in this case screaming).

But sentiments and emotions, which are most important in primary relations such as family relations, do not have immediate concrete referents. Therefore, the full meaning of many of the seemingly simple commands and sentences that are also charged with feelings and emotions can be very hard to communicate without the use of formal language.

For instance, "wash the dishes" might involve simply "it's your turn," or "it's not your turn but of course you'll do it anyway for the family's sake" or "because work is highly valued in this house as an expression of the central meaning of life" or almost endless other unspoken completions, which are such an important part of communication.

In the working class setting, we'd expect screaming if the request went unheeded.

In the middle class family the same command, if not followed by completion, is more likely to be followed by a lecture on the nature of work, or importance of learning the female role early in life, than by screaming or yelling. Abstract ideas or categories are familiar to the middle class group as opposed to the working class, and their evocation will result in the desired behavior.

Let us look at some suggestive evidence.

Is the working class of England characterized by the use of public language?

Besides Bernstein's findings, the following quotations from Hoggart suggest limited command of language:

> Thus, working-class speech and manners in conversation are more abrupt, less provided with emollient phrases than those of other groups; their arguments are often conducted in so rude a way that a stranger might well think that . . . fighting would follow . . . the physical conditions of the working lives . . . are not conditions which produce measured tones or the more padded conversational allowances . . . They have had little or no training in the handling of ideas or analysis.[5]

Are the middle classes in England characterized by the use of formal language? This is implicit in the above quotation, as in all such statements:

> It is true that you can find . . . a form of intonation created for the expression of those thoughts, attitudes and sentiments attributed to the upper class. It has exaggerated vowel sounds and a bored, lazy intonation because of the tendency of the average upper class person to inhibit his emotions, understate his thoughts and preserve immobile features.[6]

Does there seem to be differential raising of the voice and screaming in the two classes? It's hard to picture a "haughty, immobile mien" accompanying screaming.

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5. HOGGART, RICHARD, *The Uses of Literacy*, Beacon Press, Boston, 1961, pp. 74-5.
6. PEAR, T. H., *English Social Differences*, London, George Allen & Unwin, Ltd., 1955, p. 230.

Among the middle classes, "speak softly" has a long tradition: King Lear, trying to revive the dead Cordelia:

> . . . Her voice was ever soft, gentle, and low—
> an excellent thing in woman.[7]

Professor Higgins and Eliza Doolittle are the archetypes.

T. H. Pear says:

> . . . and a low-pitched voice is often deliberately nurtured by women (describing a book on etiquette.) . . . the advantages that children from good residential areas have is being encouraged to talk and discuss with courteous attention to other speakers . . .[8]

And about the working class:

> The rows which are so much a part of the life of any working-class neighbourhood, . . . can be easily misinterpreted. In narrow terraced streets, within thin party-walls, they could hardly be kept private anyhow, unless they were conducted in very subdued voices . . . They certainly are not quietly conducted . . . it is accepted that disputes . . . will arise from time to time, and that they will erupt into vivid, quick, noisy war.[9]

There is a mass of evidence of type of speech as differentiating class in T. H. Pear's *English Social Differences.* If we combine this with the Bernstein analysis of command of language, and the other quotations we have cited, we can conclude on this inferential evidence that our hypothesis can not be rejected. The English working class seems to be characterized by screaming linked with public language, while the English middle classes exhibit relative lack of screaming, while using formal language.

However, in view of the inferential and indirect nature of our evidence, the fact that our hypothesis seems to hold for these two classes in England is not enough. Let us examine another culture and see if our variables are linked with class there:

Dorothy Lee, in describing the culture of the Greeks, states:

> *Couvenda*, conversation, is a recognized form of 'passing the time,' of entertainment. Couvenda is rarely desultory, or the mere exchange of information. It is usually contrapuntal virtuosity, incisive, combative, loud; and the loudness is such a familiar quality of conversation that radios are turned on much too loud for the ears of foreigners . . . A discussion is a battle of personal opinion . . . its end is sheer enjoyment of vigorous speech.[10]

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7. SHAKESPEARE, WM., *The Complete Works of William Shakespeare*, Blackwell Wielandy, St. Louis, Mo., (n.d.), p. 1064.
8. PEAR, op. cit., p. 107.
9. HOGGART, op. cit., p. 76.
10. LEE, DOROTHY, *Freedom and Culture*, Prentice Hall, Englewood Cliffs, N.J., 1959, p. 146.

We seem to have a deviant case here. This quotation obviously refers to the mode of the whole culture, and is not class linked. There are three famous Greek movies which all show loud speech behavior: the innkeeper's wife in *He Who Must Die*, the cafe scene in *Never on Sunday*, and Anthony Quinn and others in *Zorba the Greek*. The degree of screaming does not vary with class; everyone screams, the expressive symbolism seems to run right through the culture.

Interviews conducted for this study with modern Greeks suggest that indeed, this is so. One informant volunteered that of course middle and upper class persons, even the ex-king, would raise their voices, both *en famille* and otherwise: "It is good to feel emotion, and express it."

Thus, it would seem that among the Greeks loud language, screaming and expressive symbolism are not linked to class.[11]

Then to what is screaming linked in Greece? The Greeks are an expressive people, from the classic portrait by Edith Hamilton in the lyrical first chapter of *The Greek Way*:

> . . . Greece resisted and rejoiced and turned full-face to life . . . something quite new came into the world; the joy of life found expression . . . the Greeks were the first people in the world to play; and they have played on a great scale. . . .[12]

to modern times, as we have seen in Lee. Perhaps the idea that where the culture values expression of emotion, joy, sorrow, anger, and other states of feeling, loud speech and screaming are sanctioned, or at least are not proscribed, provides another more generalized hypothesis: *To the degree to which a culture is characterized by the sanctioned expression of emotion, the people in it will exhibit the personality characteristic of loud speech or screaming in intercommunication: to the degree to which a culture is characterized by the*

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11. CHARLES MOSKOS, of the Sociology Department, Michigan University, tells the following story: (He is of Greek descent.) In the Greek National Bank of Los Angeles he heard a loud dispute between a customer of the bank and a minor bank officer, both Greeks, regarding a loan. No agreement could be reached. The officer said "Just a minute, I'll get the manager." Moskos thought, "Now I'll see whether the upper class behavior differs." In a few moments the manager appeared, the situation was explained, and the argument resumed, at the same pitch and intensity, replete with gesture.
    The same seems to be true of the Cubans, according to columnist Paul Coates in the *Los Angeles Times* of November 10, 1965. In a column on the Cuban refugees in Miami, Florida, who are from all classes in Cuba, he quotes the Miami police: "They're not generally violent people, but they're boisterous. They just make one helluva lot of noise . . . We drive by, hear them yelling and think we've got a fight on our hands. It turns out that's just their way of having a friendly discussion."
12. HAMILTON, EDITH, *The Greek Way to Western Civilization*, Mentor Book, New York, 1948, p. 15.

sanctioned control of emotion, the people in it will exhibit the personality characteristic of speech that is not loud or screaming in intercommunication.

Consider cursorily the stereotypic "picture in the head" that we of the West hold of the following "national characters:"

EMOTIONAL	UNEMOTIONAL
Loud Speech/Screaming	*Not Loud Speech/Screaming*
Greek	British
Italian	Scandinavian
Spanish	German
Cuban	Mexican*
Latin American	Chinese*
French	Egyptian*
American*	Indian*

It would seem the "picture" is comparatively, significantly different, with reference to the sanctioned display of emotion. The countries listed under "emotional" are the ones where one associates the national character with exuberance, flamboyance, gay music, joy of life, and excitability and loud, expressive joy and sorrow. Contrariwise, the British, Scandinavian and German characters are typically regarded as valuing striving for control of emotion, the ideal being to show the world a sober mien. In these cultures it is regarded as almost indecent to display emotion.

Why are these two groups of peoples different in the values placed on control of emotions? Is there perhaps something in the collective representations[13] of each of these two groups of cultures that is common to the members of each group?

These values of control of display of emotion do not come from the economic system (capitalism prevails in all these countries—we refer to the "old" Cuba and China and assume the national character has not changed.) Nor do they come from the child rearing practices, as Kardiner might have it, since they differ widely within each group.

There *is* something related to the expression of emotion that is common to the British, Scandinavian and German cultures. This is, in a general way, the group of collective representations historically having to do with the Protestant ethic in its pure or Calvinist form, much attenuated now but still having important behavioral consequences.

According to this doctrine, man's important communication is with God, to whom he is dedicated body and soul and by whom he is or is not chosen for salvation of his soul. His dedication is proven by ceaseless activity, leaving no

13. The large, shared, value-carrying ideas of a culture, i.e. "democracy." The term is from Durkheim, Emile, *The Division of Labor in Society*, tr. George Simpson, Free Press of Glencoe, Illinois, 1933.

energies or effort for "enjoyment of life" in the sense we have used it. Enjoyment is a sin, in itself and because it takes away from God. Life is life eternal, and all man's days on this earth must be dedicated to eventual entry to the Kingdom of Heaven. It would be unseemly to display emotion, and a sign of weakness of faith.

The countries listed under "emotional" are, with the exception of America, traditionally *not* dominated by the Protestant Ethic, but by the ethos of the Catholic Church, where the particular ethos of a non-sanctioned display of emotion does not hold, the doctrine of man's relations and duties to God being very different—as long as one observes the religious and civil laws, and one's *intentions* are good (toward the church and God) one may lead one's private life as one wishes. The expression of private emotions is not linked to religion.

As to the other countries, starred in the above list, we would hold that they are "mixed" with regard to the variable under discussion, display of emotion, following Florence Kluckhohn's explanation that competing values are strongly held, resulting in overlapping.[14] For instance, in the case of Mexico, it is suggested here that the traditional control and undemonstrativeness of the Indian heritage represents one ideal regarding display of emotion, and the Spanish heritage the opposite, accounting for both modes of behavior observed there, and the designation "mixed." The polyglot nature of heritages in America would have to be sorted out to account for several modes. Rose Hum Lee indicates two modes in the case of the Chinese, and makes a distinction between classes.[15] In the Egyptian and Indian cultures we could make comparable analyses.

The valued mode of control of emotions seems to be related to the system of religious beliefs, paralleling the Protestant Ethic in effect, or not.

This cursory examination of the two hypotheses leads to the conclusion that, on the basis of the evidence presented, we cannot reject either one.

Our exploration of this phenomenon, screaming, as a social fact indicates that more systematic and exhaustive inquiry might lead to interesting additions to knowledge of culture and personality.

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14. KLUCKHOHN, FLORENCE ROCKWOOD, "Dominant and Variant Value Orientations," in *Personality in Nature, Society and Culture*, ed. Clyde Kluckhohn and Henry A. Murray, N. Y., Knopf, 1962, pp. 342–60.
15. LEE, ROSE HUM, *The Chinese People in the U.S.A.*, Oxford U. Press, 1960.



philosophers' walk

48 pages of good talk and good writing

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REVEREND GREGORY BAUM

CLAUDE BISSELL

MORLEY CALLAGHAN

NORTHROP FRYE

CHARLES E. HENDRY

OTTO C. LUENING

B. D. H. MILLER

EDGARD VARÈSE

Returning to his University for the honorary degree of Doctor of Laws, a distinguished novelist talks to a graduating class about writing, and how a whisper can still work magic in the era of the endless monologue

THE BIG PUBLIC MESSAGE AND A NEW KIND OF LONELINESS

Morley Callaghan

Standing here, I feel a little like Peer Gynt, who after so many wanderings, many of them in the world of the imagination, finally comes home. You remember the scene? It is one of the great ones in all literature. Having seen the ends of the earth and judged of them, Peer Gynt finally comes home in time to comfort his dying mother with childlike fancies. Now it seems to me that an older Ibsen might have given this scene another twist. Peer Gynt is here, the tired and lonely wanderer, home to offer a heart full of tender consolation. He raps on the door. It opens and there is his dear alma mother, twice as big and powerful as she used to be when he left home, waiting in full regalia to give him an honorary degree.

I should say something about the odd role Toronto has played in my life as a writer. I was born here. I live here. No one really bothers me here. It has been a good place to live and work. A man, especially a writer

should have roots somewhere. Here I walk the streets where my father walked. For better or worse, it's home. There is a legend that I am a fish out of water in Toronto. Yet from the beginning of my career, there have been fellow citizens who were quick to appreciate what I was trying to do. The fact that my books often fell into the hands of the wrong people to review — that's just luck. In so big a city everyone can't be bright. So it has honestly puzzled me that on the international scene my living in Toronto is supposed to be my red badge of courage. I've read pieces from as far away as San Francisco wondering why I'm not appreciated here at home. But best of all, last year in the spring a professor in England who had written in praise of my *Passion in Rome*, dashed off a note asking me if I would meet him in Rome later in the summer. Then there was an added note, a scrawl, dated the next day saying he had just found out from my English publisher that I lived in Toronto. Exclamation mark. Then he added that he could arrange to have me come and lecture in an English university. I had the feeling he was offering me a parole.

I did write my first stories here at Varsity. It was in my final year when I was twenty-two. Some months ago an English critic, writing in the London *Spectator* about the short story, mentioned one of mine called *Last Spring They Came Over*. It had been much talked about in avant-garde circles in Paris, where *Transition* was published in the late twenties. It was written when I was here at Varsity, and so were others that are still being printed. But how times have changed. In those days the world of the contemporary writer, the twentieth century, was, to put it mildly, off campus and I can remember a professor of English actually contending that the teaching professor should not concern himself with what was being written in his own time. It might blunt his judgment of the past. But now, good lord! And it is why I face you, a stranger and afraid, an outsider. The university has literally taken over contemporary literature. Not only is all the reviewing done now by professors. The novels too are written by academic men. Where does that leave me? Look what I missed when I was here. A world of passions and horrors, fierce ambitions and deep conspiracies, all going on in the English department. Read Albee's *Who's Afraid of Virginia Woolf?* Or Bernard Malamud or Saul Bellow. Or Mary McCarthy and a hundred others. It will go on. The writers are all there to be looked at in the big universities, all chained to the campus hearth. And they have to write about it, and they make out of the English departments a kind of imperial court, the scene of fierce struggle for power, strange secret passions and beautiful maidens wandering in from the fields. And since there are so many writers at the universities, the novel is beginning to take on all the conventions of an old Japanese play. Members of the English department are becoming ritual figures, all carried away by the

A sensitive historian of morals and manners . . . our finest novelist

"We are honouring Morley Callaghan because he is Canada's finest novelist and one of the best novelists writing today in the English language." So began Dr. Claude Bissell when he presented Dr. Callaghan to the Chancellor for an honorary degree at the Spring Commencement. The President continued:

"The Canadian genius for self-disparagement is reflected in the comment that Callaghan is a fine writer of short stories, which always carries the implication that he is really not a great novelist. The truth is that although his short stories will be read, studied, and enjoyed for many years, he will be known chiefly as the writer of fictional works of prose of a certain magnitude and nobility.

"The mark of Callaghan's work is his pure concern with the world of private emotion and thought, with the tangled underbrush of motive, prejudice, and passion. But it is not an obscure world, and it is not obscurely portrayed. Alfred Kazin has written shrewdly of the 'precision with which Mr. Callaghan can describe obscure and complex emotions for which there are few names in our language'. Like all artists he tries to make us see; the medium of words becomes, not the message, but the thing itself; the word is made flesh. In his own prose he avoids abstractions, and his characters are rarely people who deal in abstractions. He is not concerned with political issues, and he has refused to join in the royal hunt of the Canadian soul. But his novels are, none the less, profound comments on man and society. He is fascinated by the dialectics of good and evil, by the contrast between society's easy moral dichotomies and the sensitive observer's tortured sense of life's complexity.

"Canadian literature is strewn with abandoned literary careers, of writers who have produced one novel and collapsed into silence, or a series of novels each a pale imitation of its predecessor. Morley Callaghan has written nine novels, the first in 1928, the most recent in 1961, and each is a self-contained work of art. The last three novels, *The Loved and the Lost*, *The Many Coloured Coat*, and *A Passion in Rome* are the richest and most complex of all his work. In his career there is a sense of compulsive growth as he moves into new areas of discovery.

"Morley Callaghan is a Torontonian and a graduate of this University. I notice that as his work became more complex, he moved his locale from Toronto to Montreal and then to Rome. But he likes this city and the hundreds of friends he has here, and he is kindly disposed towards his *alma mater*, so well disposed that he once wrote a whole book about it. But he is not an academic at heart, and his attitude towards the academic life is summed up in this sentence from his book of reminiscences *That Summer in Paris*: 'I liked the University and had learned there that if I just passed my exams, no professors could get on my back and I had time to get my own education'.

"Mr. Chancellor: in the name of the Senate, I ask you to confer the degree of Doctor of Laws, *honoris causa*, on Morley Callaghan, sensitive historian of morals and manners, an artist enamoured of human beings."

same ritual passions. Do you wonder that when I meet an old friend from an English department I look at him now with a bemused surprise?

In Canada the good writer, the man who wants to look at the world out of his own eyes, and not out of other trained commercial eyes, probably does need a patron. Well, let the university then be his patron. I'm against patrons myself. They manage to get into your blood. By the Grace of God, I haven't needed one. But those businessmen who are economic nationalists could learn a lot from studying the lives of some pretty good writers who got confined and then seduced by the short-lived glories to be found in a purely local bush league. A writer of real quality simply can't survive in this local scene alone. Sooner or later he is found with a tin cup in his hand, or rapping on someone's door asking for a handout. No, the frontier days are over. There is the one vast sprawling industrial civilization where the English language is spoken. And the dedicated young writer, crazy with ambition to have his own excellence, has the whole world now for his parish. Whether he sits in Hart House or in Yellowknife he can pick his own contemporaries out of a world literature.

It was in this town when I was twenty and here at school that Hemingway, then unknown himself, insisted to me that there were always three or four people somewhere in the world looking for the good new writer who had his own eyes and his own ears. His own eyes, his own ears, his own tongue . . . yes, in this strange age. It's the time of the big communicators. It's the time of the endless monologue. They all want to get on the front page. They all want to talk to a hundred million people. They're all stage struck. I had the right view of this thing in a passage in my book, *The Loved and the Lost.* In a saloon there was a group we used to call the Earbenders Club. They talked and talked and talked and told wild stories, each man, waiting breathlessly to get a word in edgewise, then hold the floor, and nobody ever listened. It was good fun if you had had enough to drink, but at the end you were left feeling rather lonely. We called them the earbenders. Now they would be called communicators.

None of these public talkers is really interested in you and me and what goes on in us. So no wonder then that I've come to believe that never before in the history of the world has the imaginative writer who is something unique in himself, who has a personal vision, been as important as he is today. I know that I, for one, always want to deal with the private experience. On the page I want to whisper to a man or a woman alone. I want to be intimate and personal and close and open and honest in a way no big public communicator could ever dare to be. I know too that nowadays there need be no limit on the freshness or frankness or secrecy of the whisper, for all censorship has gone. I have no watchful sponsor, no producer, no director. At best, if I get the thing down right,

I can only offer you that rare thing, the private personal experience as you sit reading alone. But naturally it makes me the enemy of the electronic men. I'd like to think I could be judged true or false on the basis of your own private experience.

Today everybody talks out loud, and as often as possible under the eye of the camera. Some of the communicators tell me that television and the new electronic world will give me a new freedom in my choice of involvement in what is going on in faraway places. Others say the great gadget enslaves me to the hucksters — I am doomed to become a man with no soul of my own, just part of a tribal mind. Well, I know something else too . . . many civilizations have come and gone. Those that were really bright places on this earth for a time were those where the private citizens, not just the king, or the chief of the secret police, or the rich man, had won respect for the dignity of his private life. He was something more than just part of a trained audience sitting around, blinking his eyes, waiting, always waiting for the message, and never even asking who sends it, who controls it.

I can hear someone saying in that tired language of the aging hipster, "Come on, man. Get with it. The novel is dead. It's film now, man. Orson Welles just said so. And in the papers the other night the sociological man who knows about film too said nobody cares about grammar and language now. It's not important any more. It's happening man. Get with it."

Well, the one thing I can say for myself as a writer is that I have never been in the millinery business. I know what "get with it" means. It's sales talk. It's the Seventh Avenue textile designer and the dope pedlar too. It's the girl last year in the Mondrian dress who wouldn't be found dead in one this summer. I know that if I have any perceptions of my own I can never be with it. I've had to be always ahead of it. Was Joyce with it? Or Proust? Or Hemingway? Why, they were so far out of it they could hardly

find publishers. The trouble is that when the dedicated artist finds that the "get with it" men have caught up to him, it breaks his heart. He's like Baudelaire's old voyager. He has to be forever seeking something new, even if it is in death and so sometimes he kills himself. And when Hemingway, losing his mind, kept complaining desperately "I can't write any more, I can't," he was really telling the great and terrible story of the eternal artist who could no longer see why he had any right to go on living.

Now, I'd have no sense of humour if I didn't grasp that the fact I am here on such a ceremonial occasion indicates that you may have got with me. It doesn't worry me too much. I can still produce a lot of evidence and disagreement from here and there to show that my novels are not too well understood, and that even those who have praised them, according to others, don't understand them at all. You see, a writer is like a woman who has a lover. She may go around weeping and wailing and complaining that her lover does not fully understand her. The one thing in the world she should dread is that she should be fully understood.

Once this happens she loses all her mystery; she has been fully possessed; she has given her heart to the hawks; she loses her lover too. That's the way it is with a writer. If he is any good, if he is to last at all, there should always be aspects of his work you simply don't understand.

I have talked so much about the electronic medicine men and the big public communicators because I am convinced that they have succeeded in doing at least one thing. They have made and will go on making a lot of people lonelier than they ever were before. It's a new kind of loneliness. It's a great field for a writer. It is the loneliness of men and women who are always in an audience watching and being talked to and shown pictures and talked to again and told they are being involved in famines and deaths in Asia because they see the pictures. Anybody who really knows anything

about people is aware that a person can get truly involved only with another person he knows. The death of a hundred thousand Hindus in a famine, cruelly and sadly, becomes something watched on one night and forgotten the next. Not one man reaches out as a man, as a person, to the man watching another person. Out of this vast superficial kind of awareness of what is going on comes apathy, and out of this apathy the terrible loneliness that men feel in crowds when they dare not raise their own voices in any discovery and assertion of themselves.

When Mark Anthony shouted out, "Friends, Romans, countrymen, lend me your ears," he was making the request of all great communicators. Lend me your ears, lend me your eyes. You must never say to these men, "Okay. Now you do the same for me." He'd say, "What is this? Who's supposed to be the communicator here?"

There's never to be any intercommunication. There is never to be a relationship. The communicators won't shut up and listen. We always have the public face in the private place. And I think that people more and more have been losing all contact with each other as persons, and so there is a vast new kind of dangerous loneliness in North America.

Now I think that the human being really emerged from the prehistoric swamp and slime, and then from the whole crazy tribal voodoo world when he discovered himself as a person. This is why I write. I'm interested in persons and what they do or fail to do with each other. Since man has endured so much on this earth and been able to keep alive that mysterious spark in his soul and survive, I think he will be able to handle this new kind of electronic belittlement.

It seems to me too that the student revolts in some places in the United States are bearing out my view of what is ahead. To call this stirring a New Left is rather meaningless. As far as I can figure out, these students in their hearts are against the big public message, the big public face of things, the big public communication, the big impersonal mass education with its inevitable isolation of the person. I'd say they are really rebelling against their own loneliness. It makes them feel angry and overlooked. They want to turn to each other and say, "Look, I'm here. Are you there too? Maybe we should now insist we are something in ourselves."

Since all this is really about you and me, I should say something to you who are going out in the world. A few lines I had in my book *That Summer in Paris* say what I want to say. I was on Fifth Avenue in New York. There was a lot of sunlight. I was twenty-six. I had just had two books taken by Scribner's. Looking up the Avenue I remembered those lines of Balzac's hero Rasrignac, entering the great Paris of his time. The cry of immortal youth. Oh, to be famous and be loved. Well some of you may become famous, I hope so, but I really hope too, that all of you in one way or another manage to get loved.

Fair warning: Have you thrown off the regimen of regular pilgrimages to book store and library? Do you read the way a humming bird dines, hovering over a colourful blossom here, sampling a pre-digested gobbet there? If this is your pattern and you would rather not see it disturbed, beware! In this article for the Canadian Centennial Library, the President of the University yields to his alter ego, Professor of English. As a good teacher he opens doors just far enough to allow a glimpse of treasures awaiting anyone with the will to reach for them.

GREAT CANADIAN WRITING: A CENTURY OF IMAGINATION

The Anthologist's Introduction

Claude Bissell

This is an anthology of Canadian writing in English during the first century of our existence as a nation. I have included a few selections from Canadian writing in French. Good translations, either from French to English or from English to French, are not numerous. This is regrettable; yet one must remember that a literature and a language are deeply interrelated and cannot be separated without irreparable loss. Canadian writing in French constitutes a distinctive body of literature, and it can be understood and appreciated only in its own cultural and linguistic framework. This anthology, then, is confined almost entirely to one of the two literatures that Canada has produced.

I have arranged my material in six parts. The first five parts are devoted to prose and the sixth to poetry. Each of the first five parts has a distinctive subject matter, and these subjects

recur in the same sequence in the sixth part.

The first part, entitled *Places*, consists of passages that tells us something about our physical environment. Indeed, the opening passages might be characterized as a literary geography of Canada. We move across the country from the East to the West, observing the great signatures scrawled by nature. Occasionally man takes over from nature and creates a habitation that arrests the attention of the writer. But even in these instances it is the natural background that releases the imagination. Again and again one is struck by the fact that it is geology, a geology stripped of its detailed scientific content, that provides the major epic note in much Canadian writing, whether it be prose or poetry.

The remaining passages in this part, beginning with Stephen Leacock's account of a rich man's club, from *Arcadian Adventures with the Idle Rich*, evoke a specific place and time, without any precise geographical reference. But the setting is unmistakably Canadian, and may often be pinpointed. What is observed is of less importance, however, than how it is observed. In short, we are, in Robert Frost's phrase, shifting from "outer" to "inner weather".

The second part is entitled *Action*. Here the emphasis is upon physical action, often of a violent nature, in which nature is either a principal participant or an essential background. In Canadian life, as in Canadian literature, nature could bring either balm and healing or terror and destruction. It was nature as instrument of terror and destruction that frequently attracted the writer. Our greatest poet, E. J. Pratt, is constantly concerned with the pathology of power. In his poem *The Shark*, for instance, he describes a creature that symbolizes the amoral savagery of nature. But even in a universe that seemed to tower over man with an implacable and baleful intensity, he found a sure place for the human spirit, and his greatest poems are celebrations of man's triumph over a hostile universe. In other selections in this part nature is more benign. In the selection from Hugh MacLennan's *The Watch that Ends the Night* the dark and sinister qualities of nature yield to warmth and protectiveness. It is not nature that is violent and immoral, but man himself.

In the days of settlement, nature provided the test of man's valour and ingenuity. For a country whose frontiers have not yet been completely explored this remains true. In the settled areas of Canada, ingenuity and strength in mastering the forces of nature have long ceased to be important. But our long heritage of battle with nature remains, particularly in our passion for some of the more violent forms of sport. Ralph Connor's passage on the early days of Canadian football recalls the rugged individualistic days of that sport before, under southern influence, it became a vaudeville branch of General Motors. Morley Callaghan's description of a professional hockey game in the Montreal Forum brings out the violent melo-

drama of the game. Hockey rightly occupies a central place in the Canadian imagination. It is played on our great universal, ice, and it simulates the most destructive forces in nature at the same time that it evokes skill and artistry. From sport I move on to war. The transition has not been unpremeditated, for man has been able to accommodate himself to the horror of war only by relating it to a sporting code, an accommodation to which the computer and the nuclear bomb are resistant. With their background of physical struggle and of passionate athleticism, Canadians have made excellent soldiers in the non-professional sense. They have been resourceful, determined, brave, and, in so far as the circumstances permitted, exuberant.

The third part is entitled *People*. For some time it has been a basic platitude that the Canadian imagination cannot properly encompass the phenomenon of man. The opening passage from John Robins might be taken as an epigraph for such an argument. It is still true that English-Canadian literature has not produced great characters. Certainly it can be said, however, that our writers have lost their embarrassment and gaucherie in the presence of human beings. It is impossible to demonstrate adequately powers of characterization in an anthology. A proper demonstration would demand the reading of a number of novels, most of them written during the last twenty years. What I have done is to take passages that try to present general aspects of the Canadian character, or that sketch in broad outlines what might be described as recognizable types. There has never been, so far as I know, either in literature or in life, a representative Canadian, although Frank Underhill argues that Mackenzie King is such a phenomenon. We have not had fictional characters recognizably Canadian in the sense that the characters of, say, Henry James, Sinclair Lewis, Willa Cather, Ernest Hemingway, and Saul Bellow are recognizably American. In our approach to definition we tend to be defensive and negative. We define ourselves by what we are not, and we see ourselves in relationship to types that have been more clearly delineated. Not sure of what our own foibles are, we delight in cataloguing those of others.

In the final passages of this section I shift from theoretical and typical to the concrete and specific. Here I draw upon the literary type that has traditionally given strong emphasis to characterization — the short story. (It is a type to which Canadian writers have made notable contributions.) The two stories present vivid people against an environment that is sharply realized. The general flavour is one of irony, not sharp and piercing, or harsh and sardonic, but relaxed, reflective, even gentle; one is left with the feeling that the incongruities in life lie close to both tears and laughter.

The fourth part is entitled *Politics*. Since Canada is not transparently a political unit, the emphasis here is

upon the process itself. Canadians have been more concerned about the mechanics than about the theory of politics. We have been too busy trying to determine the nature of our identity to indulge in ideological conflict. In consequence, political writing does not have a literary, much less a philosophical, flavour. Indeed, most writing and speaking on political subjects is of a humdrum nature, consisting either of extended inventories of material progress, or of windy rhetoric. But there are exceptions, and I have included two political speeches, each of which in its own way achieves a degree of literary excellence. (It would be a pity, at any rate, to exclude oratory, since the public speech constitutes the staple of the Canadian literary diet — the dutiful porridge of the national mind.) I have included an excerpt from Louis Riel's long speech in his own defence, because in his trial and execution politics brushed close to tragedy, and something of the pathos, if not the nobility, of tragedy infuses his words. Arthur Meighen, from whom I have taken my second selection, was of all our political figures the one most concerned with the nature and power of language. In this excerpt he is at his best, for he unites a concern for democratic responsibility with a closely argued and passionate exposition of a particular issue.

If the Canadian political scene has produced few from among its active participants who deserve a place in a literary anthology, it has inspired, particularly during this century, a group of shrewd and skilful commentators and critics. Indeed, the comment on the political life is far more lively than the political life itself. I should have liked to expand this part greatly in order to do justice to the work of this group.

The fifth part is entitled *The Critical and the Contemplative*, and consists of passages that deal with various aspects of the intellectual life — social philosophy, literature, the arts, education, and religion. If our political life has not been dominated by ideas, the same cannot be said of other areas. Canadians, indeed, have come arguing down through the years. The Canadian periodicals of the 19th century resounded to the major controversies on the continent in religion and science, and to a lesser extent in politics and sociology. In our century the influence of the serious periodical has waned, but its place has been taken by the universities from which in recent years have come a flow of books of a controversial nature. The

scholars in universities have been joined by a group of lively journalists who have frequently found a congenial home in one of the major newspapers. Indeed, a good deal of the writing on subjects of intellectual interest is journalistic in nature — topical, argumentative, and unsystematic. Much of it is devoted to the probing of the Canadian soul or to attemps to account for the apparent lack of any soul at all. From time to time we are urged to abjure this national narcissism. But it is not likely that we ever shall. It is a subject in which we have an obsessive interest, and it is moreover a subject upon which only Canadians can speak with full authority. One can see this clearly if one compares Northrop Frye's concluding essay in the recent *Literary History of Canada* with Edmund Wilson's recent collection of essays about Canada. The great American critic reminds one of a four-masted schooner — a noble sight in full sail, but, alas, largely irrelevant to the issues of our age. Mr. Frye's essay reminds one of the most recent spacecraft, its parts beautifully and subtly fashioned, its antennae reaching out to receive and to record the music and the message of the spheres.

Canada has made one important contribution to general speculation, and that is in the area of communication. The two figures here are Harold Innis and Marshall McLuhan, the first coming to his subject by way of economic history, and the second by way of literary criticism. But our intellectual staple has been religion, a concern that manifests itself chiefly in our poets. Occasionally, as in the poetry of Pratt, they are sensitive to the Christian tradition, but the general tone is speculative and agnostic.

The various parts of this anthology are not conceived of as categorical and inflexible units. Occasionally the reader may well be initially puzzled by the placing of a passage in a particular place and wonder why it did not go elsewhere. But I have sought to achieve a sense of continuity so that the reader will be led on from one selection to another. The relationship between passages is often that of contrast and, indeed, opposition. We are a people not easily given to overmastering national convictions. For every strong national view, it is not difficult to find one diametrically opposed to it.

By selecting poetry about subjects that have already appeared in the prose sections, I have tried to break down the barrier between poetry and prose. Poetry is not something arcane

and remote. It is, in one sense, a technique of using words to achieve heightened effects. E. J. Pratt and Thomas Raddall, for instance, both deal with the subject of telegraphic communication at sea. The former uses rhyming verse; the latter prose, and to many it would be difficult to determine which of the two is the more effective. Sometimes a writer will express the same idea in both prose and poetry. Douglas LePan talks about the nature of the Canadian imagination in a piece of discursive prose, and deals with the same subject in his poem *A Country Without a Mythology.*

This anthology, as the title indicates, is designed to provide a representation of the best Canadian writing in English. Occasionally I have included passages that have a purely documentary or historical interest and that could not be looked upon as literature by any definition. I have done this in order to show the ingredients that have gone into the making of the Canadian imagination.

In the making of this anthology I have read many new books and I have re-read many old ones. For the most part I have relied upon strong impressions gained during the happy years when my primary concern was the reading and teaching of English-Canadian literature. I have received help from many sources, particularly from colleagues who have given hints and suggestions. I am especially indebted to Frank Underhill, who sent me a long and fascinating bibliographical letter on Canadian writing about politics. I have received great assistance from my wife, who read many of the novels that have in recent years escaped me, and selected a number of passages that I used in this anthology. I am also grateful for her philosophical and cheerful attitude during a "holiday" that was in large part devoted to the preparation of this anthology.

Ultimately an anthology of any lasting worth must be writing that the anthologist selected for the pleasure it gave him long before he thought of being an anthologist. Most of the passages in this anthology gave me such pleasure, and I hope that they will now give pleasure to others.

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Six years ago, when Jacques Barzun came up from Columbia to deliver the Marfleet Lecture, VARSITY GRADUATE reported, "In our Library his publications are catalogued under 11 different headings: art, anthropology, biography, criticism, education, English history, ethnology, history of music, literature, modern history, and music". Soon he will be with us again, living on campus from March 30 to April 12 as a Centennial Professor. These professorships have been made possible by grants from The Varsity Fund and the Associates of the University of Toronto, Inc., New York.

TO PRAISE VARÈSE
(from The Columbia University Forum)

JACQUES BARZUN

It is, I think, a reproach to our civilization that in commemorating a great artist we must rely on the feelings and thoughts of the moment and the halting words that they provoke. Why are there not some ritual words to mark the passing of the artist as there are in the various churches to mourn the man? For the intention of ritual in rededicating the listeners through the words is to remind them of certain permanent truths, and surely the conditions of art and more especially the tribulations of the greatest, most innovative, artists have not changed in 500 years.

This generality is proved again in the figure of Varèse. Everybody now celebrates him. The newspapers run editorials, the auditoriums resound with his music. Where was this collective interest and effusive goodwill when he was alive and still able to produce? His was the standard case and it must not be misunderstood. He was never unrecognized. He had warm friends and admirers and helpers from the start and all along the road. His genius was manifest and his efforts enlisted their due following. But what a creator needs is public facilitation — and for his particular

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work, not for something else — facilitation to perform, to exhibit, and as we say, to *establish* his idea; not medals or prizes or fame in themselves, but the kind of acceptance that enables the man's energies to concentrate on creation, instead of the necessity to waste these energies on mere contrivance and management.

And that facilitation he was denied. It is the old story and nothing will change it. It is so familiar that one is even led to suppose that an artist who does not undergo this odyssey cannot be great. That is not true. One of the deplorable aspects of our blindness is that it confuses judgment in this way, making us value real things irrationally, by the volume of public talk or by the absence of talk outside the small group of the faithful. Now that these two groups converge at last in support of Varèse, what we must be on the watch for is the next man who is ignored and who should be recognized, not for his own sake but for that of his work.

Meanwhile, it is evident that Varèse is the man who solved in music the generic problem of the twentieth-century arts, the problem of creating a new idiom by creating new materials. The half millennium of high art since the Renaissance has exploited its characteristic means to the utmost, and there is nothing more to do along those lines in any art. What we need now is not new technical tricks or new variations on old themes and feelings, but a new substance and its appropriate new feelings. In contemporary music, Varèse provided the first viable answer to this historic demand.

Let me now present testimony in support of what I said at the outset, that it is possible for a great man to be recognized by the best judges and to be a great unknown until his death. By chance, a few days before Varèse died on November 6, I was reading here and there in the correspondence between Richard Strauss and Romain Rolland, and my eye fell on the following: Rolland in Paris writes to Strauss on February 21, 1909 — "I talked a great deal this morning with one of the heads of the Orfeo of Barcelona and with a young French composer who has been living in Berlin for a couple of years and who admires you so much that he is afraid to call on you. His name is Edgard Varèse. He has great talent and seems to me particularly gifted as an orchestrator. I think you will find him interesting. He possesses what I believe you love as much as I do and what is so rare today—I mean *life*."

Varèse, it is clear, belongs to that extraordinary generation that came to maturity between 1905 and 1910, that so-called Cubist generation which is only now coming to be viewed as the founding fathers of modern art. Curiously, an important group of these men came together again in this country during the First World War. I was reminded of this in a note I received from Marcel Duchamp. "With a deep feeling of nostalgia," writes Duchamp, "I remember when Varèse and I arrived in New York and the groups of friends we made or met

To praise Varèse Columbia University presented "A Commemoration of Edgard Varèse" in their McMillin Academic Theater last December — an event that drew to the campus hundreds of the composer's friends and admirers from all parts of New York intellectual life. The Group for Contemporary Music at Columbia University, conducted by Charles Wuorinen, played *Octandre* (1923). Harvey Sollberger, flutist, gave *Density 21.5* (1936). Excerpts from the electronic portions of *Déserts* (1949–1954), as revised by Varèse at the Columbia-Princeton Electronic Music Center in 1961, were presented. Film sequences by Thomas Bouchard were shown, including one of Varèse's workshop as he left it made specially for the Commemoration. The program concluded with *Poème Electronique* (1957–1958), adapted for this performance by Vladimir Ussachevsky, professor of music. *Poème Electronique* was the musical part of the spectacle of sound and light presented during the Brussels World's Fair of 1958 in the pavilion designed by Le Corbusier. The speakers at the Commemoration were Jacques Barzun, Dean of Faculties and Provost, who spoke for Columbia University, and Otto Luening, professor of music who spoke for Varèse's colleagues; the articles here are adapted from their remarks. The text by Varèse (*page 73*) was intended by the composer to be given as part of the Ferruccio Busoni Centennial Celebration held at the *Casa Italiana* of Columbia University this spring.

there again at the time: Walter and Louise Arensberg; Picabia; Albert Gleizes, the Cubist painter just recently exhibited at the Guggenheim Museum; Ozenfant; Henri Barzun; and Louise Varèse who has been our friend's devoted companion ever since." And he concludes, "A bientôt, cher Varèse."

My father, whom Duchamp put in his list, not long ago published these words about Varèse: "He is the architect of the new simultaneity in pure sound, the master of our only living music, of which we who are leaving the scene will not hear nearly enough before we go. Hail and farewell."

Igor Stravinsky wanted to write a special note, but illness prevented him. I therefore quote from his tribute of a while ago in *The New York Times*. "I became acquainted with Varèse myself," he said, "only at the end of his life, and then only slightly. But that was enough to know his genuineness and his unauctionable integrity. I am deeply saddened by his death."

Others, too, who could not attend this commemoration wrote letters in his honor. William Schuman, who took part in the first performance of *Ionisation* writes: "Edgard Varèse is surely among the giant creative artists of our time. It seems at least a hundred years ago that I was snared by Nicolas Slonimsky into taking part in a performance of *Ionisation*. It was not merely that I had never played the instrument that was assigned to me — I had never even heard of 'the lion's roar.' As in everything else, Varèse was ahead of his time. Buckets as musical instruments are no longer

a rarity. But Varèse was no trickster. His scoring called for the same nuance and delicacy afforded any conventional instrument. How astonishing, little by little, to glean the remarkable combinations, gradually to understand the relationships, and finally to know that the banquet set before us was indeed grand, the appointments of the table properly germane to the exquisite cuisine and that even my humble role as tamer of the 'lion's roar' had its place."

Norman Lloyd also writes, "Varèse was an elemental force. He brought new concepts of sound to a world which, whether it knows it or not, needs to understand itself in tone. As original as he was courageous, Varèse was a pioneer of the space age in the arts. If there were a true sense of values in the world, Varèse would have been honored as one of our few originals in a time of conformity."

Elliott Carter, a lifelong friend, tells us the following: "Having been an enthusiastic admirer of Edgard Varèse for forty years and a friend for thirty, I am still impressed by the fascination which his music never ceases to awaken by its originality of conception and execution. It was a special concern with sound, with music as a thing in itself, and its compelling assertion which gives his work so much meaning to these confused and distressed contemporaries under the conflicting, unfocused pressures of American musical life. The commanding imagination that demanded these musical formations challenges by its provocative, revolutionary position so characteristic of the man himself, no doubt the only position possible for a composer today confronted by a musical life of complacently accepted routines, administered by the docile to the somnolent."

And to conclude, Leonard Bernstein, whose interest in Varèse's *Amériques* will, I hope, lead to a new performance, adds these remarks: "It grieves me to be unable to attend this memorial concert. Varèse meant much to me both as musician and as music lover. Many words have gone forth in praise of Varèse as a composer and innovator, but it is as a music lover that I must spontaneously think of him. Involved as he was in electronic devices and sounds of the future, he never for a moment lost his love for the great sounds of the past. I recall him in my dressing room after a concert of Beethoven as enthusiastic and filled with joy as a student just discovering the magic of this music. And it was certainly this intense love for music, which he never used for his own ends but in whose service he used his own person, that enabled him to make all his experiments into deeply musical and human experiences. His influence and vitality and contribution to music are forever immeasurable."

From boyhood I have also been a student and enthusiast of Varèse's music. *Amériques* transported me in the mid-twenties. *Ionisation* convinced me that here was the music of today. I believed this so strongly in my own

twenties that 32 years ago when I was asked to contribute a chapter to the required readings for Columbia freshmen taking Contemporary Civilization I devoted a page to Varèse and concluded it with the superb encomium which the late Paul Rosenfeld devoted to *Ionisation*. Those freshmen of long ago didn't know what they were getting in for, but I still believe they were getting the right thing.

These witnesses-in-chief have been heard, and what they prove is that genius does not simply need or want recognition and praise; or rather, he has no need or want of them unless their absence causes the big world to roll on heedless until the task is done and the man is gone.

Otto C. Luening

Varèse's early studies in Paris centered on mathematics and the sciences. When he was nineteen he entered the Schola Cantorum to study with D'Indy and Roussel; he worked later with Widor at the Conservatoire. The tradition at the Schola Cantorum included the study of Gregorian Chant and early polyphonic choral compositions.

During these formative years Varèse founded the *Choeur de l'Université Populaire* and established the concerts of *Le Château du Peuple*. Debussy, an artistic enemy of D'Indy, heard one of Varèse's works. Varèse has reported Debussy's comments: "I don't understand your music but you have a right to compose as you please as long as it is expressed clearly, and is yours. And this music *is* yours." In 1907 Varèse went to live in Berlin, where Richard Strauss arranged to have Stransky conduct Varèse's Symphonic Poem *Bourgoyne* with the Blüthner Orchestra, and Hugo von Hofmannsthal wrote the libretto for Varèse's opera, *Oedipus and the Sphinx*, the score of which was lost during World War I. Varèse organized the *Symphonisher Chor* to perform old polyphonic music. He and his chorus took part in some of Max Reinhardt's productions. Ferruccio Busoni, the prophetic and visionary composer-pianist, became a friend and sponsor of Varèse.

After a rigid military interlude Varèse came to the United States in 1916. By 1919 he had organized and was conducting the New Symphony Orchestra in New York, and in 1921 he and Carlos Salzedo founded the International Composers' Guild here. The Guild gave first and repeat performances of works by Charles Ives, Carl Ruggles, Henry Cowell, Dane Rhudyar, Leo Ornstein, Arnold Schoenberg, Anton Webern, Alban Berg, Igor Stravinsky, Hindemith, Bartok, Casella, Honegger, Chavez, and many others.

In the early twenties Varèse began advocating, in lectures and articles,

the need for closer co-operation between engineers, scientists, and musicians. By the end of that decade he called for perfected electric instruments for contemporary music. A group with him founded the Pan American Association of Composers. In the 1937 Bennington Summer Dance Festival, Hanya Holm used his *Ionisation* for the Finale of her dance, *Trend*. It was a sensational event. Varèse met with a group of musicians one afternoon after it was over. There was some rather casual talk about "modern" music, but some of those present were really surprised when Varèse launched a most stimulating discussion of the spacing in Beethoven's symphonies and sonatas. It continued for three hours. On his way home one of the guests was heard to remark, "I didn't know that Mr. Varèse was so learned!"

He demonstrated his love of choral music again in the forties when he organized a number of choral groups to perform Renaissance and Baroque music. He often told me that his favorite contemporary composer was Heinrich Schütz (1585–1672). His Greater New York Chorus gave a contemporary vocal program in the forties which included works by Cage, Hovaness, Ruggles, Wigglesworth, Kerr, and one of mine. With all of his other activities, he also taught composition. The names of William Grant Still, Jolivet, and Colin McPhee are, of course, well known. Marc Wilkinson and Wen-chung Chou studied with him in more recent years. His attitude about teaching was this: "One can only help people to express themselves clearly and then to be *themselves*, and not someone else." He taught a course in contemporary music and a seminar in composition at Columbia University in the summer of 1948. For the contemporary music course he got statements from leading composers all over the world and used them as texts. The student-composers he taught as he found them and helped each one to develop his artistic potential.

In 1950 he went to Germany where he heard the eminent physicist, Dr. Werner Meyer-Eppler, lecture on "The World of Sound of Electronic Music." Varèse saw there at long last his dream come true: the scientist and composer were meeting on common ground. He gave a seminar for composers at Darmstadt that same year. A new generation of composers was tremendously impressed with him and hailed him as the precursor of much that had happened and was happening to them. For the past five years he had been a member of the working group at the Columbia-Princeton Electronic Music Center. He learned to handle new machines, worked with technicians, revised some of his scores, encouraged and criticized other composers in the group, came to concerts and supported the project. He also sketched a work for the Group for Contemporary Music at Columbia.

Varèse, with Wallingford Riegger, once introduced a combination of left-bank café life and *stammtisch* to New York. They decided that the

trouble with artists here was simply that they sat too long in their studios and that this would have to be corrected. They reserved space in a mid-town restaurant and every week more and more musicians came from all sections of New York and the countryside. Everything went along beautifully until Ruggles got into an argument with a waiter who said he thought Mozart was greater than Beethoven. Varèse said we cannot have men with such closed minds waiting on us. So we moved the whole group to a restaurant in Greenwich Village for a while. Later, the musicians lost Varèse to a painters' club.

Varèse despised anything that was pedantic or mediocre in intent or performance. At the same time he was extremely generous to those he admired. For the occasion of the Ferruccio Busoni Centenary, held at the Casa Italiana of Columbia University on April 6, Busoni's student Edward Weiss and the violinist Christine Edinger performed, and Louise Varèse graciously permitted Varèse's "Ferruccio Busoni — A Reminiscence," which he had planned to present, to be read by another. We are grateful to her for allowing it to be published here in part.

Indeed, like Busoni before him, like Liszt before *him*, Varèse speculated on the future, lived fully in the present, remembered the past. In that grand tradition, he believed it to be his duty to work with and for his colleagues. They, in turn, admired him and loved him.

FERRUCCIO BUSONI — A REMINISCENCE

Edgard Varèse

In 1907, still in my early twenties, I went to Berlin, where I spent most of the next seven years, and had the good fortune of becoming (in spite of the disparity of age and importance) the friend of Ferruccio Busoni, then at the height of his fame. I had read his remarkable little book, *A New Esthetic of Music*, a milestone in my musical development, and when I came upon, "Music is born free; and to win freedom is its destiny," it was like hearing the echo of my own thought.

From the beginning Busoni took an interest in my work and let me bring him my scores for criticism. But one day — by then I had known him for three years or more — I brought him my latest score, whether it was *Les Cycles du Nord* for orchestra, or an opera based on Hugo von Hofmannsthal's *Oedipus und die Sphinx*, I cannot remember. In any case he seemed surprised and expressed pleasure at the way I had developed. He went over the score with special attentiveness and asked many questions. At certain places he suggested modifications, which I found contrary to my conception. He asked me if I didn't agree with him, and I said

emphatically: "No, Maestro," and gave him my reasons. "So," he said, "You will not make these changes." "No, Maestro," I repeated somewhat belligerently. He looked at me for a moment and I thought he resented my rejection of his recommendations as youthful conceit. But then he smiled and, putting his hand on my shoulder, said: "From now on it is no longer *Maestro* but *Ferruccio* and *Tu*." We spoke Italian or French when we were alone together.

Having become acquainted with Busoni through his extraordinarily prophetic musical theories in his *New Esthetic*, I was surprised to find his musical tastes and his own music so orthodox. It was Busoni who coined the expression, "young classicism," and classicism young or old was just what I was bent on escaping. He could never understand how *most* of the works of such a master as Mozart, his favorite composer, could bore me as they did and still do. But Busoni also wrote: "The function of the creative artist consists in making laws, not in following laws already made."

Together we used to discuss what direction the music of the future would, or rather, should take and could not take as long as the strait-jacket of the tempered system ("the diplomatic, 2 semi-tone system," as he called it) continued to keep it immovable. He deplored that his own keyboard instrument had conditioned our ears to accept only an infinitesimal part of the infinite gradations of sounds in nature. However, when I said that I was through with tonality, his quick response was: "Tu te prives d'une bien belle chose." He was very much interested in the electrical instruments we began to hear about, and I remember particularly one he had read of called the "Dynamophone," invented by a Dr. Thaddeus Cahill, which I later saw demonstrated in New York. All through his writings one finds over and over again predictions about the music of the future which have since come true. In fact, there is hardly a development that he did not foresee, as for instance in this extraordinary prophecy: ". . . I almost think that in the new great music, machines will also be necessary and will be assigned a share in it. Perhaps industry, too, will bring forth her share in the artistic ascent." How right he was, for it is thanks to industry that composers today compose by means of electronic "machines," invented for industry's benefit but adopted by composers, with the assistance of engineers, for theirs. To musicians who have known Busoni only as a pianist, or through his scores, this ambivalence will come as a surprise. It was as though his heart, loyal to the past, refused to follow his adventurous mind into so strange a future. In any case I owe a tremendous debt of gratitude to this extraordinary man — almost a figure out of the Renaissance — not only one of the greatest pianists of all time, but a man of wide culture: scholar, thinker, writer, composer, conductor, teacher and *animateur* — a man who stimulated others to think and do things.

One evening last spring, Canadian radio listeners found themselves sharing a wave-length with two scholars from the Federated Colleges of University of Toronto. Consciously or not, they were also tuned to the life-force of a great academic community: the physics & chemistry of ideas in ferment. One of the voices they heard belonged to a Roman Catholic priest, teacher of religious knowledge and theology and director of the Centre of Ecumenical Studies in St. Michael's College. The other was the voice of an ordained minister of the United Church, professor of English, and the principal of Victoria College — a post he will leave at the turn of the year to become Varsity's first University Professor. Their illuminating and thought-provoking discussion was part of a CBC series called "The Human Condition". The following transcript is reprinted from a new CBC publication, *Media 1*.

THE VOICE AND THE CROWD
A dialogue on man's search for salvation

Reverend Gregory Baum and Northrop Frye

BAUM Doctor Frye, we have been invited to have a conversation on the attempts of men to reach out for salvation, and on whether this means a withdrawal from or involvement in the world. I must say that I don't find this subject an easy one, because the very meaning of salvation is not something that is really always very clear to me. At the moment, in the Catholic Church, and it seems to me in all the Christian churches, there seems to be a tendency to re-interpret the meaning of salvation. At one time we thought that salvation meant to be with God, to be reconciled with God, and that the effects were, above all, in the life hereafter. Salvation was really meaningful and powerful, not now, but after death. It would seem that in most Christian churches there has been a shift of emphasis. We seem to say that if salvation has any meaning at all, it must have meaning

right now; that it is a new condition, a liberation, a healing that takes place in us in many ways. Therefore, I think if one asks Christians today what they mean by salvation, I think one will get many different answers.

FRYE My own background is evangelical and my first encounter with the Word would be associated with, say, going to revival meetings and having people with the glitter of pure hysteria in their eyes say, "Are you saved, brother?" Whatever I mean by salvation, it is not that. In that context, it seems to me to be really a state of unanswerable self-satisfaction, and I would imagine that anything which is worth making the centre of one's life ought to be something very much more ambiguous. I would say that salvation has something to do with finding one's identity, that we're always finding ourselves in situations which are morally neutral, but every so often you can be in a situation where you feel that by a certain act, you would essentially betray yourself, and by another act you would be standing by yourself; that second one is where the conception would begin, to my mind.

BAUM I would like to add that our idea of salvation depends very much on our understanding of what we want to be saved from. Do we feel the need of redemption, of liberation? Are we conscious of our isolation, of the wounds in us? Are we conscious of the ambiguity of life; that not only our evil deeds but even our good ones are somehow tainted by self-seeking, that there is much in our lives that is somehow determined by psychological mechanism, by little compulsions. Are we conscious that we cannot really do or be what or who we want to be, and that it is precisely from these forces, which draws us away from our true selves, that we want to be redeemed?

FRYE The dilemma of right and wrong, good and bad, is something that one never escapes from in any action. Every action is involved in a situation which is both good and bad, both right and wrong. I would find the search for salvation to have something to do with a kind of awareness of freedom which is also an awareness that one has somehow or other come alive, moved from ordinary life into the same life repeated more intensely.

BAUM Doctor Frye, could you explain a little further what you mean by living life more intensely, or reliving life more intensely?

FRYE I mean that we face situations in ordinary life with a kind of reserved emotional charge. We don't see things with the maximum intensity of vision or of emotion — we'd destroy ourselves if we did — but every so often we become engaged in significant acts, and realize that although we're in this same life, in this same world, we're suddenly seeing the significance of what we're doing in more dimensions and with a greater intensity and awareness. That to me

Full circle at CBC: radio-borne word fathers The Printed Word

Media 1, from which we have reprinted the dialogue of Dr. Frye and Father Baum, is a new publication produced on an experimental basis by the Canadian Broadcasting Corporation. Between its covers is a varied collection of other substantial material from CBC radio and television. There is an account of a CBC expedition to the Galapagos Islands, written by the expedition's leader, John Livingston, and its film director, James Murray, and illustrated with an array of photographs taken on location. In "The People are the City", Gordon Hawkins of the Canadian Institute on Public Affairs gives a retrospective view of the 12th Annual Winter Conference held in Toronto in January 1966, to explore the need for more active involvement of citizens in civic affairs. Also included is "A Look at Technology in History" by J. Gordon Parr of the University of Windsor. Some sobering facts about the incidence of want in this country are revealed in an article based on CBC programs about poverty in Canada.

In 1963 the CBC launched its New Writing contest to encourage young Canadian writers. *Media 1* presents "The Paraphernalia of Consolation", a short story by Beth Harvor who won the 1965 prize for fiction, and "The Garden of Square Roots", a poem by Gwendolyn MacEwen who won the 1965 prize for poetry. "Assignment Mexico" incorporates photographs taken by James Murray and accompanying text by writer-broadcaster Lister Sinclair.

The concluding feature is "Vietnam Perspective", a six-part examination of the Vietnam problem by Kyung-Won Kim of York University.

Media 1 is but one title in a steadily growing catalogue of CBC publications. Among the authors represented are Barbara Ward (*The Rich Nations and the Poor Nations*), Northrop Frye (*The Educated Imagination*), F. H. Underhill (*Image of Confederation*), J. K. Galbraith (*The Underdeveloped Country*), C. B. Macpherson (*The Real World of Democracy*). The latest book to be published is *The Creative Writer*, by Earle Birney, which takes the reader into the dynamic inner world of creativity. To be released in November is *Darwin and the Galapagos*, a companion piece to the recent television series. Scheduled for release over the next few months are *Civil Disobedience*, by George Woodcock; *Literary Criticism*, by Eli Mandel; and *Political Criticism in North America*, by T. B. Bottomore. In the planning stage is a book on "the psychology of being" by Dr. Rollo May.

Media 1 (at $1.75) and information about all CBC publications may be obtained by writing to CBC Publications, Box 500, Terminal A, Toronto 1.

is the repetition on a more intense plane of the acts which we carry on in ordinary existence.

BAUM The religious person would say that this kind of freedom, the freedom to live more deeply and to experience the ordinary things of life with a greater meaning, is communicated through faith in Jesus Christ. I think the religious person would say that through the forgiveness of sins and through the trust that one has been accepted by the Lord and lives as a son of God, suddenly so many threats and fears which normally might surround us are removed and we are enabled to enter into a greater personal freedom and to live with many less reservations the questions and the meaning of life.

FRYE I understand that, but couldn't the same kind of awareness occur without any kind of religious context in it at all?

BAUM I firmly believe that this is possible and yet, as a Christian, I would say that wherever this happens, it is indeed God who is at work transforming men according to the image of His Son, making them into deeper human beings through the action of the Spirit, in some mysterious way.

FRYE Let me put that in my own terms, which are different and may or may not be contradictory. I would say that I can imagine situations, such as the Nazi terror in the last war was very fruitful in producing, where people die as martyrs, not so much *for* something as *against* the evil thing that kills them. Many of these people who died as martyrs were martyrs in the classical traditional sense, that is they are witnesses to the existence, here and now, of a community which will be here after the Nazis have been swept into the ashcan of history. I can see that the kind of martyrdom has within it another dimension (at least for me) into what I would call the infinite, the eternal. But for them it might not have, and in fact the renunciation of the religious faith itself might be for them an essential part of their act of freedom.

BAUM Could you explain a little more how the renunciation of one's faith or of one's religious practice could be a sign of greater freedom?

FRYE Well, suppose, for example, in Canada there was set up a particularly abominable tyranny and that all men of good will, Catholic, Protestant, Jewish, agnostic, atheist, everybody who had any kind of sense of normal

human decency, had to unite in opposition to this tyranny. There would be many martyrs to such a tyranny, if it were strong enough. Many of these martyrs would be people who would be, say, liberal humanists; they would be people without any religious commitments at all. They would fight this tyranny with the same courage and the same intelligence as religious people, and if they died, it would be absolutely essential for them to shut out of their minds the religious dimension, or significance, of what they were doing.

BAUM Oh, yes. I would like to introduce, at this point, the distinction between religion and faith. I think that in many parts of the world, even in Canada, there are many families and whole sections of society where religion is traditional, where people grow up into religious surroundings and where it is natural and normal to go to church and to accept the teachings of the Church. This, I think, is religion. It is something that can be observed from the outside. Yet it seems to me that this is really different from faith, because it is possible to be religious and perform religious acts and not really believe that God is good and that all people are brothers. These inner acts, or these inner gifts, are communicated through the practice of religion, but not automatically and not necessarily. One can therefore distinguish between religion and faith, and sometimes we meet people who do not practise any religion, and yet, somehow, are touched and, even without putting it into such words, believe that the substance of life is love.

FRYE Couldn't this awareness of freedom, this consciousness of what *we* would mean by salvation, not be attained by somebody for whom God did not, in any practical sense, exist or who had examined the conception of God and decided that it didn't belong in his life?

BAUM Certainly. I might mention here that at the Second Vatican Council there has taken place an interesting doctrinal development. In antiquity, we had a formula called 'no salvation outside the Church'. This was interpreted at that time as meaning that salvation, that is God's mercy, was available only to those who were baptised, and to those who remained in the Christian community. Since those days, a tremendous doctrinal development has taken place. Little by little, reflecting on the Gospel, on the message of Christ, the Christian community (the Church) became aware that the mercy of God is active everywhere, that a long time before

the call of Abraham and the coming of Jesus the mercy of God was at work among men, and even today, beyond the Christian Church, God is at work transforming men. The Church firmly believes that the God who has revealed Himself in Jesus is the God of mercy, and that He is always more wonderful than we expect Him to be and that He is surely at work among men who, on one level, say 'no' to Him.

FRYE So that the will of God can be achieved by the denying of God, if it is done from the premises which would be necessary to certain kinds of attitudes.

BAUM It seems to me that this follows from what I have said. There is an old tradition among Catholics, and among Christians generally, that Christian life, and therefore the life of the saved, means basically the avoidance of sin, the avoidance of evil. The idea here is that the best way in which we can be faithful to the call of God would be by avoiding contact with an evil world as much as we can, and therefore by some sort of withdrawal to save our souls. In our preaching and our retreat conferences, the saying of Jesus about the man who gains the whole world and loses his soul is repeatedly quoted, in a sense encouraging people to stay clear of involvement in the lives of others and in the world. I think that what is happening at the moment in the Christian churches, at least as I see it, is that this attitude is changing. We now feel that in order to be saved, to be liberated, to be redeemed, we have to die to ourselves many times and we can only die to ourselves if we become involved in the lives of others and in the world of men. We feel that by concentrating on ourselves we reinforce our basic egotism, while by becoming involved, we experience the kind of liberation and freedom you have spoken about.

FRYE Yes. I imagine we probably agree that trying to retreat from situations in which there is evil is like trying to run away from our own backbones, that we'll always take that kind of situation with us into whatever situations we enter. It seems to me that every significant involvement with the world and any significant action in the world is at the same time, to some degree, a withdrawal from that world. That is, most of us are creatures of social ritual, we carry out habits imposed on us by our profession, our age group and so on, and the current movements of protest, let us say, in connection with civil rights for Negroes, Vietnam, and so

on (whether they are right or wrong is not my concern now) are attempts to involve oneself in society, which are at the same time a questioning of the assumptions of that society, and to that extent, a standing back from society. It seems to me that unless you have this double focus, the action is not wholly a free action.

BAUM I agree that to go out from oneself and be involved in the lives of others, or in political life, is possible only if this is accompanied, or guided by a certain critical sense. There is never any total surrender to other men or to other movements, because this would be unfaithful to the recognition that human life is ambiguous. While we want to bear the burden with others, we do not want to become ill with society. We want to acknowledge the illness in others as well as in ourselves. By involvement with the world, we don't want to be conformed to a neurotic environment, but to become healthy. Therefore, I think that every involvement in this sense also means a greater recognition of the illness of society, and therefore of detachment.

FRYE I think of the remark of Socrates in *The Republic*, that the wise man will always live under the laws of the just society, no matter what society he is actually in, and I suppose every man who does find his identity, who does perform an act which he feels is a free act in the sense of having stood by himself, is really living under two cities — the actual, Canadian middle-class 20th-century society around him and another city which is also here and now and which won't go away.

BAUM What do you mean by this 'other city which won't go away'? Would you sort of amplify on this, Doctor Frye.

FRYE Well, take a social worker, for example, working with under-privileged people in Toronto. She would have in her mind, however unconsciously, a vision of a better, a more just, a more equal city, and it's in the light of that vision that she does her work. I should think that anybody whose work is an expression of his own freedom also has within him some kind of vision, conscious or unconscious, of a society towards which he is working.

BAUM So we live in two cities, in the sense that one is the actual situation in which we find ourselves and the other one is our ideal which we discover, or in a sense initiate, but towards the realization of which we ourselves must be totally engaged.

FRYE Yes. And the moment of salvation or of the awareness of freedom that I spoke of is to me the moment of suddenly realizing that you are, in fact, a citizen of a different city from the one you're actually in.

BAUM Yes. And this would give a meaning to withdrawal. This would be the kind of withdrawal, therefore, which is required in order to discover the real dimensions of one's engagement in transforming the world. Do I understand you correctly?

FRYE I would prefer the word 'detachment' to the word 'withdrawal', because I'm not thinking of moving from one place into another, but of being in two aspects of the same place.

BAUM Yes, I agree with you that the word 'detachment' is much clearer. We were speaking of the two cities and this recalls to my mind two other cities — those of which St. Augustine spoke and wrote: the City of God and the City of Men. This was a kind of division which ultimately proved to be somewhat dangerous, because it created the impression that the City of Men is somehow doomed and cannot be totally redeemed, and that it was the City of God which really counted — a City that was never totally incarnate here among us. It was a reaching out and away from this world, to be achieved in some sense by withdrawal from this world. Of course, St. Augustine could cherish the dream of the two cities because he lived in the Roman Empire and it really did not occur to him that the stuctures of society could be altered. He felt that this had been the structure of society for centuries, and that the few Christians couldn't really change it because this was somehow the eternal structure of the world. Therefore, salvation, to him, did consist in living faithfully to that invisible City of God. This subject is also of great importance in our dialogue with Marxists. It is not at all clear whether the Marxists, the classical Communists, are opposed to religion because God does not fit into their philosophical vision of the world, or whether they oppose religion on account of the social consequences as they were observed by Marx in the last century. It could just be that the opposition of Marxists against religion is founded on the social consequences of a religion which emphasizes that salvation is in the life to come; that life in this world is a valley of tears; that we must try to help our neighbor, but ultimately cannot change society; that we can only suffer here and look forward to a happier future in the life to come. It seems to me that the discussion about salvation, therefore, is of the greatest importance in our

dialogue with Marxists. At the Second Vatican Council, the bishops were conscious of this and in the document called 'The Church in the Modern World' (in the first part, chapter 3), they wanted to stress and emphasize that the Christian who believes in the age to come is by this very belief of faith obliged to take this world seriously.

FRYE Well, of course, for Marxism, God is a symbol of man's alienation, his tendency to give away his energies and his powers, either to the ascendant political class or in exchange for an imaginary life afterwards. The question of life after death, certainly, would have to give place to the question of life before death; not whether you live after death, but whether there's any proof that you've ever come alive. That would be the central issue that the Church would have to face, I imagine.

BAUM This problem is very important in places like South America. I think that if, in Marxist terms, religion would actually be revolutionary, would make people more profoundly engaged in changing society, then I think their attitude toward religion would change. It would seem that the kind of dialogue between Marxists and Catholics which has been carried on recently has sort of brought this out as one of the remarkable results. I think that the reason we do not follow St. Augustine any more is that we have a different understanding of human and political life than he had, that we are convinced that the city here on earth can be changed, and that we are, in some real sense, responsible for it. You introduced, for example, a division of two cities different from St. Augustine's.

FRYE Yes, I know that there is a traditional Christian view of two cities, where one is sacramentally related to the other and where you live by certain habits, certain disciplines, certain attitudes. Surely the thing which 20th-century literature and 20th-century theology have emphasized a great deal is that one has to discover this unchanging city for oneself in all sorts of unexpected ways and unexpected experiences, and that nobody except God (if one is working with the conception of God) knows who the people are who have discovered a more permanent dimension in their lives.

BAUM Could you develop this?

FRYE I'm thinking of the way in which it has become almost a literary convention to build a work of fiction, a short story, a play, or even an entire novel, around events leading up to a

certain crucial decision on the part of the chief character in the course of which he decides either for his freedom or against it. The whole Existential movement in Sartre and Camus seems to have a great deal to do with building up towards this kind of crucial incident in a person's life. That moment where one feels either that one has betrayed oneself or that one has stood by oneself, is the moment I started from when I was trying to think of a conception of salvation. With many of the writers who deal with this, who illustrate it in literature, there is, of course, no explicit background of faith at all. It's simply an aspect of human experience.

BAUM I don't think that I totally understand what you mean by freedom, because as you describe it, the choice, the total engagement of being faithful to oneself, still remains ambiguous to me. We do know nowadays from psychology that there are alive in all of us some self-damaging tendencies, some masochism, if you like. I think it is possible for a man to desire his own destruction. I think it is possible for a man to desire his own failure, to provoke a relationship and crisis at his place of work, or even a crisis with his wife and children, in order to be defeated. I think that this kind of choice of one's own misery has all the earmarks of freedom; it feels like freedom. Therefore, unless we have some norm or standard outside of ourselves, constantly calling us into question, and making us respond to a norm which is above us (and when I say this, I think of course as a clergyman of the Word of God), I do not see how it will be easy for us not to be misled at times and find freedom in experiences which ultimately are destructive.

FRYE Let me give a deliberately trivial example of what I mean by this kind of theme in contemporary fiction: it's a Canadian novel, a war novel, and in the course of it, a soldier gets into bed with a prostitute and the prostitute says 'I want you to say that you love me'. The soldier's first impulse is to say 'Oh, go to hell!', and then suddenly he realizes what her life has been like, how tough and mean it's been, how she's been pushed around and how important it is for her to have this said to her, and so he says the words she wishes to hear. The statement itself is technically or formally a lie, but in human and existential terms the soldier knows that he's done

something rather important at that point.

BAUM How does he know that he is not feeding some really destructive neurosis in this girl?

FRYE He doesn't know. The point is that he's choosing *that* as the resolution of the particular situation, in spite of its possible ambivalence, in spite of the risk that it may be nonsense. We began by using words like salvation and involvement and alienation — those are words connected with religion or with philosophy. It's almost impossible to use these words without falling oneself into the more commonplace meanings of them, that is, it's hard to speak of withdrawal from the world without suggesting, either to others or even to yourself, that you mean running away from the world, and it's hard to speak of salvation without thinking of yourself as being hooked and landed by some other power and pulled out of the sea. The thing that interests me about the contemporary situation is that there seems to be in the world not a conviction of sin, which for most people is a question-begging term, but a conviction of alienation, a sense of being somehow cut off and left to live without the dimension of any kind of eternal community. That, of course, is related to the Marxist conception of alienation, as the result of man's being cajoled into giving away his life to his masters, but it has entered the West very deeply, too, in the sense that man somehow has to come to terms with being. For many people, it amounts to saying that man has to come to terms with being abandoned by God, and this is a conviction, a kind of axiom of experience in the West, which I think makes communication on any kind of religious plane extraordinarily difficult. Do you see what I mean?

BAUM I'm not so sure whether I completely understand you. Do you describe alienation as man's estrangement from other people, his loneliness, his incapacity to enter into communion with others or do you think that it must be, first of all, described in religious terms?

FRYE No, I was thinking rather of alienation as a fact of contemporary consciousness whereby man accepts the fact that he is both an individual by himself and a member of a society, but doesn't feel any essential link

outside himself either as an individual or in relation to a society.

BAUM You mean he has no access to his neighbor, to his brother, he regards other people somehow as a threat, or he is suspicious that they are somehow against him?

FRYE He may feel that. As a member of society, he does not feel identified by or with society, he is a member of what is called 'the lonely crowd'. But when he thinks of himself as an individual, he feels equally alone and equally bereft.

BAUM But is this not precisely the mystery of human life — that we can only be ourselves to the extent that we enter into communion with others. In other words, we need the brethren to be ourselves, and therefore I wouldn't even bring up the question of alienation *from God*. It seems to me that what one wants to say could very well be said in terms of the community, and it may well be that men can find God only if or when they have found the brother; that it is through the love of the brethren, through being drawn into communion with others, that suddenly talk about God which before was meaningless makes some sense.

FRYE Yes, it would doubtless make sense, but if we think for example of the conception of salvation as the opposite of being abandoned, what strikes me in contemporary literature and a great deal of contemporary thought is that the consciousness of being abandoned seems to be almost primary in 20th-century man, in some of the most deeply thoughtful and sincere and intelligent people. Unless one is willing to accept that and to come to terms with it one cannot communicate with a very radical element in contemporary consciousness.

BAUM What do you think this consciousness is due to?

FRYE It's partly the feeling that a man has nothing outside himself with which he can identify as being an essential part of his personality. He knows that he is a member of a society, and that the social being that is a part of his individuality doesn't permit him to draw a circle around himself and say that his individuality ends there. Yet society does not give him the values that he really needs and hungers for. There are so many

people in this prosperous and apparently contented North American society who have simply been driven by superior sensitivity to reject the values of that society.

BAUM But why should this happen in our age? Why was this not experienced in the same way by men of the 19th or early 20th century? What do you think are some of the factors; would it be our affluence, our wealth. . . .?

FRYE Well, it has something to do with affluence and wealth. That is one reason, I suppose, why the Marxist challenge to middle-class values has never really taken root in our society. The whole business of alienation for the worker and waste for the member of a leisure class (who simply lives off the worker) has been replaced with us by the affluent society, but we discover that the conceptions of alienation and waste are just as lively as they ever were. There is a sense of loneliness or abandonment which is only relieved in certain crucial moments of conflict or tension, which are very often moments of rejection of society. I'm not putting this very well. . . .

BAUM I think I understand what you mean and yet I find it difficult to agree with such a tragic understanding of human life. I find it difficult to accept that salvation, this experience of freedom in which the self becomes richer through the identification with another or with others, is such a rare experience. I find it difficult to accept that modern man, who is perhaps more threatened by alienation, is therefore further away from salvation and that communion, sharing, friendship, and faith are so far away from him. Perhaps one reason why estrangement is so widely spread today is that the old-fashioned kind of community, stable community, mother and father, the village, and the unchanging town have disappeared, and therefore the child from the very beginning is exposed to an ever-shifting community and can never really identify for long with any one system or set. I think that this is one of the reasons for estrangement and yet does this not perhaps point to the way in which salvation today must be offered to men and the way in which we ourselves must discover it: by finding communion (not by finding God I was almost going to say), by finding communion first, by entering into a friendship with others and discovering

dimensions of sharing which we were close to in the past, and only after being saved in this way, listening to what God has to say about himself in the Gospel?

FRYE Yes, you may feel that this mood is excessively tragic and yet I'm trying to define what seems to me to be almost the overwhelming feeling in contemporary literature, which is just as characteristic of deeply religious writers like Graham Greene or François Mauriac as it is of, say, Sartre.

BAUM I think this is true, yet when you look at the extraordinary revival of religious concern you see another side of modern society. In the literature of the last century, religion and God were hardly ever mentioned. When Balzac wrote his novels about France, a priest might occasionally occur in them, but only as a kind of marginal figure, as the representative of the *ancien régime*, while in our modern contemporary literature, it seems to me that God, and even Church somehow, have moved into the centre of preoccupation; that deep down, modern man is concerned about the eternal questions, even when he says no to them.

FRYE One could look at it another way, that the reason for that rather careless treatment of the priesthood in Balzac is that he thinks of the Church as a normally functioning part of society, whereas in the 20th century the Church is a big question mark, something which is felt to have either no function or to need its function accounted for in some way.

BAUM And yet, isn't it good and healthy and Christian if the Church is a question mark? Must not the gospel and God always also be a question mark? There are so many people who believe that to have faith means to have convictions which never change, which are safely wrapped up in our pockets and the less often we look at them, the more certain we are that they will always be with us. In our modern day, we have found that we cannot protect religious convictions by wrapping them up and putting them into our pockets. We can only preserve them, if that is the right word, by constantly questioning them.

FRYE In other words, doubt is not the opposite of faith, but the complement of faith?
BAUM Yes.

FRYE Yes, and the particular problem

I'm posing is that while the vision of faith may or may not be true, the vision of doubt certainly is true. It's the obvious physical fact in front of us. There is a sense in which salvation is a quest, the quest being the discovery of what gradually becomes more and more negative as you keep discovering it. First of all, you think of it as something sinful or as something wrong — then, eventually, it becomes nothingness, just something that isn't there. That experience seems to me primary and unanswerable, and because it's unanswerable, there must be an answer. The quest of 20th-century sensibility seems to me to be a quest for what is being called the absurd, and the only thing which can complement or fill out the discovery of the absurd is something which is itself absurd, and which you must believe in because it is absurd. The point that I've been harping on as a kind of Devil's advocate all along is that man lives most of his life on a relatively unreflective plane, that there are certain moments of awakened intensity in that life, and that in the 20th century, the majority of such moments are also moments of horror. These are moments of absurdity, moments of feeling abandoned, lost.

BAUM Doctor Frye, I really have some difficulty following you here, because my own experience of literature and of modern theatre and films is really somewhat different. I agree that the people who are presented there perhaps do not find answers to their questions, but they all seem to have an inkling of the kind of answer they are looking for, and even when they find themselves condemned never to find anyone whom they can love, or by whom they are loved, they somehow know that what really counts is love. Even if they are incapable of believing in anyone and be really trusting they do seem to know, even in their despair, that this is exactly what they desire. I find, therefore, that modern literature and modern films, in addition to the message of despair, have in and behind them some very definite vision of what salvation is all about.

FRYE There seems to be such a restless, incessant and, for many people, morbid emphasis on the part of contemporary literature to discover what you might call the nature of man. One of the great classics of English literature which students always have the greatest possible difficulty with is the fourth book of *Gulliver's Travels* about the Yahoos and the Houyhnhnms. These stinking, ferocious,

nauseating creatures, the Yahoos, are the animals, and the horses have some education and common sense and some reason. Gulliver finds that his nature is Yahoo nature, that he is cleaner and more intelligent but he is still the same kind of thing. Because Swift was working within Church establishment and within a set of social values that he assented to, he knew what to do with that conception: Gulliver goes back to England, not hating the human race (that would be silly) but hating pride. It seems to me that in contemporary literature, you have this constant probing into the nature of man. You have it in, say, Becket's *Waiting for Godot* where the characters are engaged in a dramatic action which is not an action at all; they are simply waiting around for something to happen, nothing does happen, but in the meantime what has been revealed is what has always traditionally been called the natural man. And in a novel like *Lord of the Flies* you have almost the experimental-laboratory conception of natural man — put man on a desert island and what becomes of him? Well, what becomes of him, of course, immediately is that he sets up a most demonic tyranny. This is the same kind of ironic vision that you get in *Gulliver's Travels*, but you get it without the sense that there is in Gulliver of bringing to bear the norms of a church and a society in judgment on it. It is left up to the reader to evaluate it, and the reader is just as lost and bewildered as the characters in the novel.

BAUM Doctor Frye, if you think this is the image of man that is described in modern literature, it reminds me very much of the image of man that is described in certain biblical passages. For instance, St. Paul talks about man without God.

FRYE St. Paul had his answers. I'm not suggesting that this is a new problem. I'm suggesting that it's the old problem in which the answers are no longer accepted.

BAUM It seems to me that what you are leading up to in a way is the traditional Protestant position that salvation is really forgiveness of sins. If it is our hidden feeling of guilt that is the inner accuser which provokes us to regard other people as our enemies, then the remedy would indeed be some experience of the forgiveness of sins, that is some experience that we are accepted and that despite our wounds and the fragile and miserable in us, we are nonetheless accepted because someone else loves us.

FRYE There's quite a jump to take. Of course, I know what you mean, but many modern men wouldn't accept this remedy because they feel they're going to die of the disease anyway. I think that the forgiveness of sins that you mention would certainly be a cure for alienation if it were an experience.

BAUM I find that films and some modern novels which seem to betray

the despair of man really lead not to despair, but rather help us to understand our own awful experiences of life. By understanding them more deeply, and seeing in them a deeper dimension, we are enabled to transcend them and to move ahead. If we do not move ahead from the important experiences of the past, we remain with them and regress; instead of having new experiences we simply relive the old ones. I think there is something therapeutic in modern literature and films, because by reliving something very deeply and by discovering deeper dimensions in it, we are free for new experiences, and therefore are led to salvation.

FRYE Well, mind you, I'm not disagreeing with any of this, I think our assumptions are the same assumptions, but I am merely stressing the fact that the language in which one puts this can be extremely misleading because the language sounds consoling and the rejection of consolation seems to me to be very important as a characteristic of modern man.

BAUM Yes. At least the rejection of words. I think people refuse to listen, they don't want words. They have been disappointed. Language itself is no longer trusted. Only action is credible.

FRYE And consequently if man experiences the absurdity and loneliness of existence for himself in his own mind, then he has to experience what we've been calling salvation in this way as well, and everybody concerned with what is called charity, with Christian love, has to respect this quality of the self-discovery of salvation in whatever form it comes.

BAUM I don't think there is really a difference between Christian love and other love. Whenever men forget themselves and reach out for one another, this is a mystery which is called in the Bible death and resurrection. This happens not only when Christians are led to love, but whenever people reach out for one another. Therefore I agree with you that a specifically religious language today no longer communicates the real mystery of the transformation of life, but only the kind of language which is real and describes and manifests the kind of experiences which are available to us every day.

FRYE Yes, so that when W. H. Auden says we must love one another or die, I think I know what he means and I imagine you know what he means. Yet for many people this has overtones of trying to hypnotize oneself into thinking that people are amiable who are not amiable, and while I know what you mean when you say that there's no difference between love and Christian love, still there is a difference between love and gregariousness. The kind of unanswerable vision of the community of man which we may or may not be fortunate enough to get in our lives is perhaps what we have been revolving around.

After receiving the honorary degree of Doctor of Laws at Waterloo Lutheran University, the director of the School of Social Work at the U of T talked to the graduating class about the unlimited frontiers of "Inner Space"

A QUESTION OF PRIORITIES: SPACE-SUITS OR COMPASSION

Charles E. Hendry

During the past several months I have been absent from Canada on sabbatical leave. Much of my time has been spent in field studies of community development and development planning. Jets have flown me to Puerto Rico, the Dominican Republic, Honolulu, Peru and Mexico. Jeeps have taken me deep into the interior of these countries, far from the Hilton hotels and the sophistication of the great cities.

One cannot experience the turmoil and tragedy that is the Dominican Republic, observe "Operation Bootstrap" in Puerto Rico at close range, smell the stench and inhale the dust of the forbidding, slum wastelands that fringe the great city of Lima, or visit remote villages in the mountains of Mexico and far into the sugar cane and henequen stretches of Yucatan, without an acute awareness that men in this hemisphere, and throughout

the world, are separated as much, if not more, by hundreds and thousands of years in time, as by hundreds and thousands of miles in space.

This impression is immensely strengthened when we move in and about the sites occupied by the ancient Incas, Aztecs and Mayans. Their achievements in road construction, irrigation, storage of food, design, architecture, engineering, mathematics, astronomy, economic and social organization, military arrangements, political administration and speculation on the meaning of existence, are monumental. We would do well to re-examine and re-appraise such and be reminded in the process that "all past is prologue".

The fact that modern astronomers, and then only during the 1930's, have obtained definitive evidence that our galaxy, with its hundred billion stars, is only one among a legion of galaxies in the universe should not detract one iota from the brilliance of El Castillo, the Temple, and of El Caracol, the Observatory, at Chichen Itza in Yucatan. Archaeology, happily, supplies a potent antidote for arrogance.

It is a fact, however ironical in retrospect, that an editorial in the otherwise excellent and erudite *The New York Times*, on February 2, 1958, the day after the United States launched its first space satellite, Explorer, into orbit, asserted, with confident celebration, that "we are now on the threshold of man's supreme adventure", the conquest of outer space.

With respect, I believe this is nonsense. Clearly the exploration and conquest of outer space are important, but not nearly so important as the exploration and conquest of inner space. No one has more profoundly or more eloquently examined the consequences of space exploration than the great theological scholar, Paul Tillich. I share his concern over the esoteric elite who so largely control these massive research operations.

It was reassuring to learn, however, late last month, that after 22 years of bio-chemical research, a team of scientists at Berkeley had laid bare the make-up of the hormone that controls human growth, a hormone containing a total of 188 amino acid units, the most complex hormone that scientists, to date, have completely analyzed.

This comes closer to what I am convinced is most central, urgent and crucial. Where we most need scientific investigation and professional intervention is not in the physical environment but in the social environment; not in man's relationship to nature, but in man's relationship to himself and those with whom he lives. Actually I believe that we face a greater danger of exterminating man's humanness through neglect of what Erich Fromm calls "The Art of Loving", than the extermination of biological man through an atomic holocaust.

I have a vivid recollection, between sessions one day at a conference at Princeton, of going for a stroll with Stuart Chase, hoping, as we walked leisurely along in the direction of the Institute of Advanced Studies, that

we might, by a happy chance, come upon Albert Einstein. A few years later, in 1955, I returned to Princeton for a second consultation. This time as I walked alone through the campus, deeply sensitive of the reality of Albert Einstein's recent passing, I found comfort and reassurance in the benediction that is spring. Everywhere around me the flowering dogwood, wisteria and lilacs reminded me that in God's infinite wisdom, a kind of automatic renewal of life has been built into the very heart of the universe. Einstein understood this principle. In the realm of physical relations he had penetrated further than anyone into its mystery. Would that some comparable man of genius could help us penetrate, with equal scientific precision, into the complex and conflicting realm of human relations!

Of one thing I am certain — and my certainty rests upon the findings of behavioural research and professional experience — the nature and quality of man's social functioning is directly associated with the nature and quality of his social relationships. Both begin in the relationship between a child and his mother. It is in this intimate setting that a person's sense of security, identity and autonomy are basically conditioned and essentially determined. If in place of unconditional love and a sharing in the exploration of ever-widening dimensions of reality, a child experiences rejection, or must meet arbitrary conditions to command attention, or at the other extreme, must surrender himself to complete smothering, or make up for some deficiency, deficit or deprivation in the life of the parent, the result is likely to be disastrous, both for the individual and society.

Rejection by others is about as devastating an experience as a human being can encounter. Few of us escape its crushing consequences. At one time or another all of us have known something of what it means to be unwanted and unaccepted. When such rejection, however, becomes categorical simply because of the colour of one's skin or because of the particular group to which one is related by kinship, by religion, or ethnic origin,

then the consequences are profoundly disturbing and damaging. Distortions of this kind cannot be contained within the private world of an individual person. They release forces and produce tensions that soon spread beyond the psychological boundaries of interpersonal relations to the larger dimensions of the intercultural and the international.

Universities are not immune to these same dangers. It was only a few years ago that C. P. Snow wrote his celebrated and controversial essay on what he viewed as a splitting off of scholarship and science into two quite separate and sealed compartments. The recent Duff-Berdahl Commission's Report on the governing of our universities in Canada reflects also sensitive concern over another kind of relationship, the relationship between boards of governors, faculty members and students. Furthermore, periodically one still encounters reservations, sometimes approaching rejection of professional education in the university on the part of scholars, scientists and academic administrators.

I attach great significance to a recent event which I like to believe may be symptomatic of a rather basic change in the social climate. I refer to the announcement that Don K. Price, Dean of Harvard's Graduate School of Public Administration, has become president-elect of the American Association for the Advancement of Science, a body of 100,000 members, representing some 300 affiliated, scientific organizations.

One can gauge the measure of this man by reading his *The Scientific Estate*, published last year. Dean Price is not only concerned with correcting the precarious imbalance which obtains between the physical and the social sciences, but between the whole science sector and what might be called the human sector. What commends Dean Price to me, particularly, is the clear and explicit manner in which he sets his analysis within a philosophical context.

I propose to quote one or two pasages from his vigorous text by way of elaboration:

> ". . . wherever science tries to become a unified and authoritative

system of thought that pretends to explain all types of knowledge and to guide all types of action, it becomes more a rationalization of a will to power than a valid intellectual discipline.

". . . It is clear that science alone, without the intellectual checks and balances provided by other intellectual disciplines, will not fortify a political system against the temptation to use power to force men to be free . . . and it is equally clear that science and theology alike are unable to define with authority the ends of public policy. Though science has given mankind greater certainty of knowledge, it has gained that certainty by renouncing the concern for purpose that must remain at the heart of politics and administration.

". . . policy questions cannot either be solved like an equation or disposed of by a statute. On the contrary, political authorities can deal with them only within the context of a politically responsible organization. They do so partly by coming to understand the facts themselves, but mainly by granting their support and confidence to an appropriate balance of scientific, professional and administrative talents within the public service."

May I say, parenthetically, how pleased I am that Waterloo Lutheran University has announced the establishment of a new, professional school, a school of social work. I am deeply convinced that professional schools of unquestionable academic excellence, with their continuous feed-back from the field and laboratory to the classroom, especially at the graduate level, are essential and indispensable in our system of higher education.

It has been observed that "The mistakes made in medicine have been made not by men who don't know, but by men who don't care". This can be said of any profession. Curiosity and investigation, which are the hallmarks of science and scholarship, must now be matched by concern and intervention, which in a special way, characterize the healing, teaching and helping professions. Preoccupation with subject matter areas of knowledge, in watertight compartments, each insulated from the other, must yield increasingly to cross-disciplinary and interprofessional collaboration. It is time too, in the interests of relevance and responsible realism, to discard any academic stilts that may still be in use. T. V. Smith once admonished his students not to be content to think the thoughts of great thinkers after them, but to think thoughts worthy of great thinkers. Mr. Chancellor, neither I nor even IBM can improve upon this superb advice.

Frontiers unlimited! The conquest of social space and of inner as well as outer space! These are the challenging prospects that lie before you. May you match your newly gained competence with deep human concern and with an ever-deepening and widening compassion.

This appraisal of the new director of Royal Ontario Museum, University of Toronto, was written for *Museums Journal* by a Lecturer in English at Brasenose College, Oxford. The author, and the *Museums Journal*, published by The Museums Association at 87 Charlotte Street, London W1, have given permission for the article to be reprinted here.

NOT WITHOUT HONOUR
The Achievement of Peter C. Swann

B. D. H. Miller

That museums should preach to the unconverted as well as the converted, baptize as well as confirm; that collections were made for the public, and not the public for collections; that the customer is sometimes right: these are no longer merely truths, they are already truisms. And there lies a danger. To every action an equal and opposite reaction. In the zeal of reform, means are distorted into ends; humility is forgotten; the display of art yields to the art of display. The cynic might propose *Ars est celare artem* as the device of the New Museology. In the Department of Eastern Art in the Ashmolean Museum, opened in 1962, Mr. Peter Swann has avoided both excesses: tempering valour with discretion, he steers a course between the Scylla of pretension and the Charybdis of mere pedantry. The display is striking and original; it is none the less servant, not master, of the things displayed. Mr. Swann has recently installed the collections of Eastern art in the new museum at Princeton. He now leaves England for Toronto, where he will be Director of the Royal Ontario Museum; it is therefore time to set down his Oxford achievements.[1]

The Oxford collections of Eastern art are a new growth. Forty years ago, as Mr. Basil Gray has reminded us, the only chance to see a Chinese painting "was in the Master's lodgings at University College where Sir Michael Sadler had hung a few among his notable modern pictures".[2] The Church bequest of Japanese *tsuba* and *ojime* was received in 1915, the Sayce bequest of Chinese ceramics in 1932; most accessions, however, have come within the last twenty years. Only ten years ago, an outstanding gift from Sir Alan Barlow, and a princely benefaction of almost 3,000 pieces by the late Sir Herbert Ingram "more than doubled the already impressive Chinese, Japanese, and Islamic collections of the University". That these collections have grown, in so brief a space, to rival almost any in Europe, is due above all to the perspicacity and enthusiasm of the late Dr. William Cohn, who from 1946 until his retirement in 1955 was Research Adviser to the University in Indian and Far Eastern Art. Students and connoisseurs will recall the Museum of Eastern Art opened in 1949 in the ponderous Indian Institute, where it was "situated", as *The Times* put it, "at the top of a staircase of punitive length and steepness".[3] "Struggling with the devil of the stairs", the visitor squeezed into a gallery where T'ang, Sung, Ming, and Ch'ing rubbed glazes in cases which Mr. Swann himself has described as "of some considerable age, of awkward appearance, and dubious security": infinite riches in a *very* little room.

This notable, in many ways unique collection Mr. Swann has transferred in less than three years, at a cost of some £60,000, to a setting worthy of its distinction; that he continued, then as now, to edit *Oriental Art*, and to write, lecture, teach, and broadcast, makes his achievement the more striking. Such an enterprise could never be easy; in this case architecture and finance alike rendered it uncommonly difficult. The University omitted to allocate funds for the move; a public appeal, launched in 1959, met with limited success; only a last minute subvention from the University Grants Committee averted a scandal: even in universities, the museum curator is not exempt from frustration. The new site, the old Cast Gallery opposite the main entrance of the Ashmolean, was prominent, but unpromising. C. R. Cockerell's Ashmolean Museum, designed in 1839 and "always admirable", is yet sadly unbending: the Cast Gallery afforded some 7,700 sq. ft. of echoing space, roughly oblong and intractably arched. Mr. Swann, however, has made a virtue of necessity, and turned defect to advantage. His scheme, implemented in a "happy working relationship" — his own phrase — with the architect, Mr. T. Baker, of Messrs. Easton, Robertson, Cusdin, Preston, and Smith, is full of "ingenuity and artifice". Was the room too lofty and barn-like? He would split it horizontally, and insert a mezzanine floor, to house library, offices, workshops, and study/storage room. Was it too wide and rambling?

He would split it vertically — and since columns could not be moved, division should follow the line of the columns.

The first necessity was, indeed, to break up the area, as the contriving gardener by "many Twinings and Windings . . . will endeavour to diversify his Views, always striving that they may be so intermixt, as not to be all discover'd at once; but that there should be as much as possible, something appearing new and diverting",[4] until one acre seems to be ten. The visitor enters, therefore, by a long, low nave, rather dimly lit from above. On each side are shrines or chantries, glowing with Chinese ceramics, lacquer, enamels, and jade, with Islamic pottery and metalwork, with Japanese lacquer and ceramics. He emerges into an open crossing, lit by tungsten spotlights suspended from a grid, where table cases display Chinese stem cups and seals, and Japanese *tsuba* and *inro*; against the wall is a collection of Chinese armorial porcelain. Rising to the full height of the building, this area counters the feeling of oppression which might otherwise result from the lowness of the nave. The space of choir and chancel is preoccupied. The visitor therefore turns left into a transept, and then left again down an aisle, to a display of Indian sculpture in a central case and a range of wall cases; beyond a screen, hung with Indian paintings, a second aisle contains a dazzling show of Tibetan art. Finally, he comes to the print room, and thence out again, through a door at the far end, into the remainder of the museum.

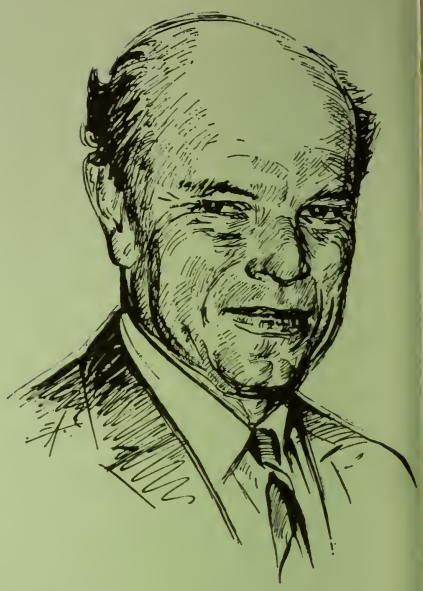
The Keeper has divided the area, he has not fragmented it; in creating diversity, he has not sacrificed unity. Rather, as in the Chinese garden imagined by Sir William Chambers, "the perfection . . . consists in the number and diversity of these scenes; and in the artful combination of their parts; which they endeavour to dispose in such a manner, as not only separately to appear to the best advantage, but also to unite in forming an elegant and striking whole".[5] Each part leads on to the next. Every detail contributes: the cases, both wall and free-standing, and the thoughtfully placed benches are all in the same natural teak; end-supports of bench and island case follow the same ultimately Japanese design. Nor has division entailed congestion. Circulation is easy, the general impression agreeably uncluttered. With 0.35 cubic ft. of case to every square ft. of floor, the public still has room to breathe.

So have the exhibits. Mr. Swann has resisted the temptation to show too much; out of a superlative collection, only the cream of the cream is on display. Equally, however, he avoids the danger he has himself foreseen when, writing of a certain museum, he observes that it "carries the Japanese tendency to show few things to such a degree that one wonders whether soon one will not be asked to make a long trip into the country to see perhaps one object in a beautiful building with a fine view.

This will be followed by a book on *Zen and the Art of Museum Display* which will remove all need for a museum".[6] The actual display, worked out after visits to many museums in the United States, shows the same attention to detail. The "cellular" disposition has enabled the Keeper to regard each case as a problem on its own. The outcome is a Palace of Art "full of great rooms and small . . . all various, each a perfect whole".

Some have glass shelves, supported on unobtrusive Swiss brackets, others solid staging. Each has its appropriate, individual background: T'ang ceramics are displayed against a Japanese reproduction of contemporary Chinese silk found in the Shōsō-in or against natural rush matting, Chinese blue and white porcelain against brown velour, Indian sandstone carvings against dark blue silk, Islamic wares against dark red antique Italian velvet. Fluorescent strip lighting inside each case allows the visitor to see the objects clearly, unshadowed either by his own reflection or by theirs. Oriental rugs on all the floors are grateful at once to the eye and to the feet.

Writing of the new Museum of Far Eastern Antiquities in Stockholm, Professor Hansford has described the conversion of a former warehouse as "something like a miracle".[7] The same and more might be said, with equal justice, of Mr. Swann's Department in the Ashmolean. The miracle remains, alas, incomplete: space, both for exhibition and for library and offices, is desperately short; future expansion is problematical. It is none the less authentic: not only does the Department provide for the collections a setting worthy of their importance, but more than that, the setting itself marks something of an epoch in the annals of display. Henceforth the *Wanderjahre* of every museum student will include a visit *du côté de chez Swann*.



For this issue, Peter Swann, as Director of Royal Ontario Museum, has for the first time edited "Meeting Place", the ROM's "magazine within the magazine". (*See facing page*)

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[1] For an account, with additional photographs, see G. M. Butcher, *O(riental) A(rt)*, viii (1962), 192–9.
[2] 'A Great Taoist Painting' (Cohn Memorial Lecture, 1964), *O.A.* xi (1965), 85.
[3] 22 September 1956, third leader.
[4] Stephen Switzer, *Ichnographia Rustica* (1718), iii, 6.
[5] *Dissertation on Oriental Gardening* (1772), p. 19.
[6] *O.A.* x (1964), 55.
[7] *O.A.* ix (1963), 158.

MEETING PLACE

Journal of the Royal Ontario Museum

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"VACATION '66"
JERUSALEM
EXPLORING THE "NEW RED SANDSTONE"
IN SEARCH OF THE MARITIMES
FROM TV TO THE GREAT LAKES
ON THE NESTING TRAIL
SOME NOTES ON FISHING

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"VACATION '66"

Some comments on what summer vacations mean for Museum Staff

PETER C. SWANN, Director

The Royal Ontario Museum serves many sectors of the community. Because it is a university museum, the largest in the world, many of its academic personnel find that what time they can spare from their museum duties is taken up by teaching. They must find time to prepare their lectures as well as deliver them. They must keep up with research work in their respective fields. All this is as it should be and they enjoy contact with colleagues and with young people in their areas of study. They have a lot to offer and the material in their respective departments adds a valuable dimension to university teaching.

But when the academic year ends, teaching members turn their full attention to their own work or head for their cottages—happily often combining the two. Then the Museum looks to its summer programme.

Many thousands of visitors come to Toronto during the summer and the ROM must be mindful of their needs. Its other great function of service to the general public does not stop in the summer. Yet the curatorial staff has its own research projects at home and in many parts of the world. It has contributed fully to scholarship in the last half-century and intends to continue to do so. Again, the collections must grow and in many fields the summer is the time to gather material. Somehow the demands of museum, teaching and research must be reconciled and family holidays must, of course, be fitted in. Often expeditions can only be carried out in the summer. Learned congresses often are held in the summer months and our members

must attend them—and indeed often contribute to them. Exhibitions must be prepared for the winter. The schedule can be very heavy and we can be excused an envious glance at our exclusively teaching colleagues!

One of the duties and vicarious pleasures of the Director is discovering where his staff is during these months, what interesting avenues of research they are pursuing, and making it possible for them to do so. As new Director of this great museum I have found this so absorbing that I felt our readers might be interested in knowing what just a few of our departments do during the "vacation" time. The Royal Ontario Museum is an exciting place to work.

JERUSALEM

The big "dig" at the old city

A. D. Tushingham, Chief Archaeologist

During the summer of 1966, as for every summer since 1962, the writer has spent his "vacation" digging in Jerusalem, Jordan. The Royal Ontario Museum has, for the past five years, been collaborating with the British School of Archaeology in the excavation of this famous old city with Dr. Kathleen M. Kenyon of St. Hugh's College, Oxford as the Director, and the writer as Associate Director. This year, the ROM's participation was supported by grants from its own budget, from funds at the disposal of the President of the University of Toronto, by donations from McGill, Waterloo Lutheran, Trinity College, Trent, Carleton and from several individuals. Our Canadian staff included staff members of several of these institutions: Robert Culley of McGill, Norman Wagner of Waterloo Lutheran, Ronald Sweet of the University of Toronto, Ernest Clarke of Victoria; and James Humphries, a graduate of the U. of T. who had participated in our British Honduras project in the spring of 1966.

As in past years, work was undertaken in several areas in and around the old walled city in an attempt to ascertain its physical limits at different stages of its history. We can now say that the present walls—built by the

Turkish Sultan Suleiman the Magnificent in 1542—follow closely the lines of the city as rebuilt by the Roman Emperor, Hadrian in A.D. 132–35. The north wall also coincides with the third North Wall built by the Jewish king, Herod Agrippa in A.D. 40–44 but the southern wall of his time included also the original site of the ancient city (David's Zion) and the southwest hill—both of which were excluded from Hadrian's city.

We are also now certain of the limits of the early Canaanite (Jebusite) city which David captured and have quite a definite idea of the lines of the extension to the north which Solomon undertook when he built his Temple—in the present Haram area within the present city walls.

In spite of these achievements, there is still considerable uncertainty as to the lines of the walls in the period between Solomon and Herod Agrippa—a period of 1,000 years. We are confident that the evidence is still hidden beneath the buildings, ancient and modern, which make up the living city of Jerusalem, but we cannot dig wherever we wish and we must depend, in many cases, on indirect evidence. While, for instance, our work in the Armenian Garden—within the southwest corner of the present walled city—has produced evidence of occupation in the century immediately preceding the destruction by Nebuchadnezzar, in the Roman period before the destruction by Titus, in the Byzantine period before the Muslim conquest, and in the period of the Mamelukes (roughly the 14th–15th centuries) we cannot automatically assume that this area was within the city walls. It could have been an extramural suburb. Only literary evidence and archaeological evidence from other areas leads us to assume that it was within the walls at certain periods. Where such evidence is lacking, we cannot adduce archaeological evidence. We cannot excavate the walls in this area—even if they are still there—because we are working on the edge of No-Man's Land between the Jordanian and Israeli sectors of the city and the ancient walls are presumably in the area we cannot touch. Incidentally, as you can imagine, we are working in a military area, restricted to visitors, and we are under the constant supervision of the Jordanian soldiers on the city wall and the surveillance of Israeli soldiers stationed in the ancient shrines of the Dormition and the Tomb of Nebi Daud which are in Israel but overlook the city walls at this point.

On the eastern slopes of ancient Zion, however, we can trace the lines of the city walls throughout the period of the Hebrew monarchy, the time of Nehemiah, the Hasmonaeans and Herod the Great—so filling the 1,000-year lacuna on this side. We can be confident that the west wall of the city in this same period followed the west slope of the hill of Zion, but only in two places have we found traces of the wall itself. The reason for this is the fact that the Tyropoeon Valley—which bounds the hill of Zion to the west—

is now so full of the accumulated rubbish of centuries that the problem of excavating deeply into it to the ancient rock levels is slow and even dangerous.

The scientific results, however, have already dispelled many of the misconceptions about the size and boundaries of the ancient city at different periods of its history. They also have produced new archaeological evidence bearing on the authenticity of the traditional site of the Holy Sepulchre, on the age of the city itself, and on its material culture at all stages of its existence.

EXPLORING THE "NEW RED SANDSTONE"

Study indicates the Atlantic provinces may be a source for fossils

Loris S. Russell, Chief Biologist

Two very important periods in the history of land animals are those known to the geologist as the Permian and the Triassic. During these times widespread arid conditions resulted in deposition of reddish sediments. In the old system of naming the major geological units, these were collectively known as the New Red Sandstone in distinction from the Old Red Sandstone (Devonian) which predated the great period of coal deposition (Carboniferous). In the southwestern United States and in South Africa and South America the Permian and Triassic rocks have yielded very significant fossil skeletons which show us how reptiles developed from amphibian-like stock and how they diversified to produce the dinosaurs and birds on the one hand, and the mammals on the other.

Fossil reptiles from the Permian and Triassic periods are not well represented in the collections of the Royal Ontario Museum. A few have been obtained by purchase or exchange, and one of these, the skeleton of the

fantastic fin-backed reptile, is being prepared for exhibition. Much more material, however, is needed both to fill in the record of the evolution of higher reptiles and mammals as displayed to the public and to strengthen the series of study and teaching specimens which enable the Museum to contribute much to the academic programme of the Departments of Geology and Zoology in the University of Toronto.

Two years ago plans were worked out to send an expedition to South Africa where, in collaboration with the University of Witwatersrand, it would have explored the Permian and Triassic rocks in search of good display and study specimens, leaving for the South African palaeontologist anything found that was new to science. This seemingly ideal arrangement for both parties was no longer feasible after the South African Government passed legislation making it illegal to remove any fossil specimens from the country, irrespective of their relative scientific value.

Canada has considerable development of rocks of New Red Sandstone type. The Annapolis Valley of Nova Scotia and the Fundy shore of New Brunswick include a number of exposures of red sandstone and shales of Triassic age, and almost the entire area of Prince Edward Island is underlain by red rocks of Permian age. A few years ago a geologist, Mr. William Take, of the Nova Scotia Museum found fossil bones in the Triassic rocks around Minas Basin. Dr. W. Langston, Jr. working for the National Museum of Canada, obtained enough fossil bones from Prince Edward Island to confirm the tentative assignment of the rocks to the Permian system.

Before any further planning of expeditions to the "New Red" of far away places, it seems desirable to examine the possibilities of obtaining fossils, at least of study and teaching quality, from these rocks in the Maritime Provinces. Accordingly, the writer undertook a survey of possible fossil localities in the Bay of Fundy region on Prince Edward Island. About four weeks were spent during the past summer examining exposures from south of Saint John, New Brunswick, to the Minas Basin area of Nova Scotia, and along the south coast of Prince Edward Island near Charlottetown. No significant fossils were found, but numerous notes and photographs were taken and specimens of the rocks collected for study. Of the various localities visited, the most promising seemed to be those in the vicinity of Grand Pré and Kingsport, Nova Scotia, but very intensive work would be necessary, preferably in the spring when falls of fresh rock from the cliff would make available new exposures to be searched. Experiments should be tried in disintegrating the rock and screening the residues or even the manual breaking of the rocks in search of bone as has been successful in other localities.

Fossil collecting in these rocks would require tedious work and much patience, but the returns could be very important. Scraps representing the

earliest dinosaurs and certain kinds of mammal-like reptiles have already been found. Even the earliest mammals, which we know were in existence by Late Triassic time, may be represented by bones in the red sand and gravels that make up the "New Red Sandstone" of this region.

Perhaps the most interesting locality visited from a geological viewpoint was the occurrence on the Nova Scotia shore of the Bay of Fundy, a few miles down the coast from Cape Split, of limestone beds representing the once extensive sedimentary rocks that were deposited on top of the great volcanic flows which today form North Mountain. These flows brought to a close the deposition of the New Red Sandstone type sediment, and it is a most intriguing question whether these overlying limestones belong to the same geological period or to a later time in earth history. Only the discovery of recognizable fossils in these rocks will settle the problem. Altogether the Bay of Fundy region of Nova Scotia and New Brunswick represents a most promising area for future fossil collecting where important geological and palaeontological discoveries remain to be made, and where good fortune might even provide a relic of an early mammal not far off the remote ancestry of Man himself.

IN SEARCH OF THE MARITIMES

The continuing hunt for textiles made and used in Canada before 1900

Harold B. Burnham, Associate Curator, Textiles Department

My "vacation" for the past summer took the form of over ten thousand miles of combined travel and research in the Atlantic Provinces. Taking my formal holidays of a month plus six weeks leave of absence in the middle of June, I headed east with my family as drivers and co-workers for ten weeks of intensive fieldwork to uncover and study examples of textiles made

and used in Canada before 1900. This was an extension of the major research project of the Textile Department that was launched in 1947 to establish a central file of all information that could be garnered. In the first two years, it got off to a flying start, thanks to financial aid from various branches of the textile industry in Ontario. Since then, it has been pursued constantly on a "chance and opportunity" basis. Even with this handicap, a substantial and valuable archive has slowly been built up. Last March there was a new break-through: I was awarded a Senior Fellowship by the Canada Council for work outside Ontario, in those parts of the country that have long hung tantalizingly over the horizon.

This Maritimes expedition is only the first of four to be followed up during the coming year, and, in order to save on expenses for other "vacations", the plan was to camp whenever possible. The idea was sound as it meant working in a holiday mood, but it was soon discovered that it was not feasible for stops of less than two days: shifting camp cut too seriously into working time, and we had to fall back on softer accommodation. The same was true when fieldwork became particularly intense, when interviews and the recording of material did not end until well after dark, and the day's notes had to be written up before bedtime to be clear for the morrow.

In the course of the summer, much was learned and recorded, and there is a large volume of notes and photographs to prove it. Now that the former have been typed, there are over ten pounds of them as evidence! From some points of view, the work was undertaken just in time. In the course of twenty years, we have never had an opportunity to talk with a traditional professional weaver in Ontario: all were gone long ago. In Cape Breton, we found the living tradition, and we spent enjoyable sessions with three weavers, all in their nineties, who were able to answer questions that had long puzzled us, and confirm deductions that had been reached solely through the study of old material. We found new terms for old friends: the overshot coverlets of New England and Ontario were "draft rugs" in Prince Edward Island, and great merriment was caused by our not knowing the right name. They were turned up during the course of a memorable day visiting farmhouses along the roads from Souris to East Cape in Prince Edward Island. In Cape Breton and Newfoundland, we were told of the spinning frolics where women walked through the woods to gather at a neighbour's house, perhaps some miles away, to spin the wool and flax that had been prepared, and of the milling frolics where the cloth was fulled to the accompaniment of Gaelic waulking songs. These were Scottish traditions where my wife's Scottish descent was useful, but elsewhere we discovered the Acadian heritage: at Caraquet in New Brunswick, Miscouche and Egmont Bay in Prince Edward Island, Chéticamp in Cape Breton, and at the University of Moncton. The vitality of this tradition, which

differs from that of Quebec, survived the terrors and hardships of the expulsions of 1755 and 1758 when these simple farmers were in the front line of fire in the English conquest of Canada. It, too, now is passing, and it is important that it be remembered as a tribute to their strength in adversity, and to their part in Canadian history. In other parts of Nova Scotia and New Brunswick, the pre-revolutionary Planters and the Loyalists made their contributions which both resemble and offer interesting contrasts to that which grew up in Ontario in the early days of settlement in the late eighteenth century.

If the art of holiday is the art of change, then we had a holiday, and a good one too, but it could hardly be called a "vacation" in the normal sense. Despite the constant travelling and the intensive work involved to gather every possible scrap of knowledge, it leaves wonderful memories: the beauty of the red shores and fields of Prince Edward Island, the bays and coves along the Atlantic coast from Louisbourg to Cape Sable Island, the diked richness of Beaubassin and Grand Pré, the broad expanse and wooded hills of the St. John River, and the rugged grandeur of Cape Breton. Over and above all this was the friendly and hospitable welcome of all the people we met, in museums large and small, in houses and farmhouses on the coasts or tucked away in hidden valleys. These are to be treasured always.

FROM TV TO THE GREAT LAKES

Teaching, television production, field study—A good Summer? Yes!

Walter M. Tovell, Curator, Geology Department

Now that the leaves have turned and fall is here, geologists sit at their desks and ponder the activities of the past summer. They ask: "was it a good one?" For the Curator of Geology in the Museum, the answer is: "yes".

The "vacation" began around the middle of May, after his return from the University of Toronto Geology Camp at Tweed, Ont. There, along with colleagues from the Department of Geology at the University of Toronto, the Curator instructed third year Engineering and Arts students in certain field procedures and observations used in constructing geological maps. This session marked the tenth year of the project.

In June, a "first" for the Museum followed. It consisted of writing, narrating, and generally assisting in the final production of a thirty-minute television programme on the geological history of Niagara Falls and the Niagara gorge. The task was undertaken by the Curator for the Canadian Broadcasting Corporation Series, "The Nature of Things", shown on the Trans-Canada Network to an estimated audience of one million people. This type of programme was a "first" in that previously no attempt had been made to use television to give an informal scientific look at a natural phenomenon. The success of the venture is perhaps best indicated by those high school teachers who, after having seen the programme, expressed the wish that more were available as resource material for teaching purposes.

This past summer, North York Township initiated an enrichment course for special high IQ Grade 11 students. Among the topics selected was "Geology", and the Curator was invited to assist in the programme. As an introduction, he guided the students through the Geology and Palaeontology Galleries of the Royal Ontario Museum, and subsequently led field trips to the Niagara Escarpment at Hamilton and to Scarborough Bluffs.

Other instructional work included a week at the Federation of Ontario Naturalists' Camp at Red Bay, Ont., on the Bruce Peninsula. This is the seventh year of the Curator's participation in this summer camp which is attended by adults both layman and professional. It provides guidance relative to the physical environment of the Bruce Peninsula in the form of lectures and field trips.

Additional field instruction was given at a course operated by the Metropolitan Toronto and Region Conservation Authority at the Albion Hills Conservation School. Here, for teachers wishing to enroll, instruction is given on conservation practices and procedures in the Metropolitan Toronto Region. The Curator was asked to explain the geological background for these operations, and to acquaint the participants with the general geological history of the region. This phase of knowledge is generally lacking among teachers.

During the month of July we spent three weeks in the field, at Sault Ste. Marie, Ont. as the guest of the Geological Survey of Canada Field Party under the leadership of Mr. C. F. M. Lewis. Field studies were directed towards the interpretation of the raised beaches and shorelines of the ancestral Great Lakes in this area. It is well known that the Great Lakes evolved through a

system of transitory lakes, following the last retreat of the glaciers. The changes took place over the last fifteen thousand years or so, due to the withdrawal of the ice and the tilting of the earth's crust. The shorelines and beaches of the Sault Ste. Marie area have been noted for many years, but they have not been studied to any extent in detail. An interpretation of their succession is particularly important in working out the details of the relationships between the ancestral Great Lakes of the Superior Basin and the Huron Basin. Shorelines similar to those in the Sault Ste. Marie area are well known from other parts of the Great Lakes as well, but most of the work has been concentrated in the more accessible southern regions. Thus, correlations are rather difficult between the southeasterly and northwesterly parts of the Huron Basin, and the Superior Basin. In order to assist in understanding the published correlations between these areas and the Sault Ste. Marie area, a reconnaissance of some of the shorelines, which have been described in the literature, was made on Manitoulin Island and on the Bruce Peninsula. It is apparent that these areas also require more study.

The history of the Great Lakes not only includes a succession of lakes higher in elevation and of larger dimensions than the present lakes, but also lakes that were smaller. The record of these bodies of water is submerged below the level of the present lakes. A study of these shrunken Great Lakes was initiated by the late Dr. Roger Deane of the Department of Geology at the University of Toronto, using scuba equipment. Unfortunately, Dr. Deane met an untimely death while investigating some of these features during underwater exploration off the Bruce Peninsula.

Mr. William Finlayson, a student colleague of Dr. Deane's, assisted in this project. A grant obtained by the Curator from the Department of University Affairs made it possible to hire Mr. Finlayson on a part-time basis, and to work over the data which Dr. Deane had collected. As yet it has not been possible to interpret the information, but all pertinent observations have now been recorded and placed on maps and profiles. These will be studied during the winter months.

The "vacation 1966" concluded with a trip to the Maritime Provinces to attend the annual meeting of the Geological Association of Canada, in Halifax, and to take part in a field trip to Parrsboro, Nova Scotia, to study the evidence for former sea levels as recorded by raised shoreline features. These features, like those of the Great Lakes, are a part of the general uplift of the land which took place following the retreat of the glaciers.

That was the "vacation" this year. Its true value, however, will not be known until the data gathered from the field research are correlated, and the seeds planted through the educational ventures bear fruit.

ON THE NESTING TRAIL

Field study of birds follows the sun from the tropics north to Canada

Jon C. Barlow, Curator, Ornithology Department

Because of their diurnal habits and the availability of different species in each season, fieldwork on birds can be undertaken throughout the year. However, study in the breeding period, when birds are especially conspicuous, is most profitable for the researcher.

To the south this season begins a month to seven weeks before its onset in Ontario, and by judicious budgeting of one's time, it is possible to begin work in the tropics and follow the spring north as it activates birds in its wake. Thus, in the Department of Ornithology, our field work began in the middle of April with two efforts to the south.

Technician D. H. Baldwin collected specimens in British Honduras, working especially at Rockstone Pond where he was able to avail himself of "board and room" at the Museum's permanent archaeological site. Mr. Baldwin was to survey the avifauna of four basic habitats, secure anatomical material (skeletons and birds preserved in spirits) as well as skins and, at the same time, pay especial attention to the status of the resident vireos (Aves: Vireonidae)—a group of particular interest to the Curator. Between April 12 and May 18, Baldwin enjoyed success pursuing these goals, and he secured over 300 birds, as well as some bats and a few fish for the Museum's collection.

Between April 15 and May 16, the Curator travelled to the Trans Pecos area of west Texas to study the behaviour and ecology of the vireos of that area, placing special emphasis on the little known Gray Vireo (*Vireo vicinior*). The research, supported by a grant from the National Research Council, was undertaken in an effort to gain better understanding of the taxonomic relationships of North American vireos, as it is believed that ethological and ecological data in concert with morphological data will aid in re-evaluating present interpretations of phylogenetic relationships in the avian family Vireonidae. The trip was notably successful as much new information was obtained concerning the Gray Vireo. Seventy-eight bird specimens, along with some small mammals and insects, were secured for the Museum's collections. New information concerning the status of the Black-capped Vireo (*Vireo stricapillus*) and the Elf Owl (*Micrathens whitneyi*) was also obtained. Dr.

W. E. Lockhart, the Mayor of Alpine, Texas, staff and students of the Biology Department, Sul Ross College of Alpine, and National Park Service staff at Big Bend National Park (100 miles south of Alpine), contributed significantly to the over-all success of the venture.

In June, the Curator continued his studies in central Ontario, this time concentrating on the Philadelphia (*Vireo philadelphicus*) and Red-eyed (*Vireo olivaceus*) Vireos. Movies of fighting, maintenance and courtship behaviour, high fidelity tape recordings of vocalizations and specimens of the Red-eyed Vireo were secured on Manitoulin Island. The Curator was aided in the field by Rev. Charles Long, Research Associate in the Department of Ornithology, and by Ross James, a graduate student in the Zoology Department, who is studying the yellow-throated Vireo (*Vireo flaviventris*) under the Curator's supervision. After a week on the Island, the group returned briefly to Toronto. On June 15, the Curator and Mr. James turned north again for seven more days, covering an area from Sault Ste. Marie to Kirkland Lake with stopovers in Chapleau and Timmins. During this trip the interspecific relationships of Red-eyed and Philadelphia Vireos were examined and movies, tape recordings and specimens of each were taken.

Since we also are interested in determining whether or not Philadelphia Vireos demonstrate clinal variation in morphological characters across Canada, we undertook two additional collecting trips in June to secure specimens for this study. Mr. Baldwin collected vireos at Amos and Lac Ste. John, Quebec, between June 5 and 28 and our Junior Technician, Rolph Davis (between June 8 and June 14) took a series of both species at Schreiber on Terrace Bay in west central Ontario.

Turning our attention again to British Honduras between July 12 and August 6, Mr. Davis collected about 90 more birds there. In addition he obtained some valuable information concerning the summer status of certain shorebirds (Charadriiformes) in that country.

The Curator spent the period between July 22 and August 4 in England first attending the 14th International Ornithological Congress at Oxford and then visiting the Bird and Mammal Departments at the British Museum (Natural History) in London. At the Congress he presented a paper entitled "Morphostasis in the North American population of the European Tree Sparrow" based on five years' study of this species in the field and laboratory. It was shown that although no appreciable morphological changes have occurred since the introduction of tree sparrows in 1870 at St. Louis, the range of variation in some characters has been reduced significantly showing that genetic changes have occurred within the population. The evolutionary implications of this continuing research are of special interest.

Finally, in anticipation of hosting the 85th stated meeting of the American

Ornithologists' Union at the Museum in August of 1967, our entire "first team"—Barlow, Davis, Mr. J. L. Baillie (Assistant Curator), and Mr. J. A. Dick (Curatorial Assistant) attended the 84th meeting of this society at Duluth, Minnesota between September 5th and 9th. Now we are ready to settle down for the duration of the new academic term to a schedule that includes laboratory analysis of field data collected in the summer, teaching of a graduate course in ornithology, supervising two graduate students, curating of our burgeoning collection (now over 100,000) and preparing for next year's "vacation months in the field".



Yellow-throated Vireo

COURTESY *The Telegram*, Toronto

SOME NOTES ON FISHING

Rod and tackle box are hopefully included in equipment for archaeological field trips in northern Ontario

WALTER A. KENYON, Associate Curator, Archaeology Department

One of the fringe benefits of doing archaeological fieldwork in northern Ontario is the excellent fishing to be found there. So, each spring I carefully pack my fishing gear and add it to the rather mountainous pile of equipment that is necessary when one is going to live and work in the bush.

Last spring was no exception. I pitched camp at the Long Sault Rapids, on Rainy River, freighted in over two tons of equipment and supplies, and with a crew of fourteen people started to excavate an ancient burial mound. The mechanics of housekeeping and the establishment of archaeological procedures kept me occupied well into each night; my tackle-box, meanwhile, sat in a corner of the supply-tent.

Two months later the job was finished. We had collected the human bones from three burials; we had measured and photographed the log cribbing that had been placed around them some 2,000 years ago; and we had excavated and rebuilt the mound which marked—and still marks—the final resting place of some ancient statesman or warrior.

Our next project was to meet Bob Wheeler of the Minnesota Historical Society on the Winnipeg River north of Kenora. Here, with a gaggle of scuba divers, we were trying to locate some axes, muskets and other currency of the fur-trade which Alexander Henry lost when a canoe upset in the turbulent waters of Boundary Falls on August 9th, 1800.

Unloading our gear at the foot of the rapids, Bob and I sent the divers into a quiet pool where we suspected any heavy objects would be deposited. In about fifteen minutes, Claus Breede, my assistant, poked his bearded head out of the water and said: "Would you be interested in a case of axes?" While Claus was collecting his underwater camera and drawing-board, other divers reported muskets, kettles, ice-chisels, thimbles, beads and musket-balls. As every find had to be left on the bottom till it could be photographed and sketched, things suddenly became frantic. My tackle-box was forgotten as I doled out white plastic marker buoys, balls of twine, film for underwater cameras and band-aids for divers who forget that axes are sharp.

By the end of the day, the surface of the pool was dotted with a thicket

of marker-buoys, the divers were exhausted, the air cylinders were empty and my notes were a shambles. After supper, I worked on my notes and records while Claus and the other divers ran an air compressor far into the night.

Because most of the divers could only work for a long week-end, we were, as usual, pushed for time. The final day was therefore devoted to raising the specimens we had already located and photographed. With most specimens, this was no great problem. But one of the "objects" on my list of finds was actually a cluster of musket-balls. These had to be picked up individually and dropped into Javex bottles. As there were about 4,000 of them, the complexity and tedium of the operation is about the same as kneeling on a rock under 14 feet of water and turning over 4,000 pancakes or fried eggs!

When the entire collection was spread out on a flat rock at the edge of the river, it was an impressive sight. Here indeed was a fine sample of trade-goods. It was duly admired, photographed and counted; but then it had to be packed for shipment. By eleven that night the job was done and the jeep was loaded for an early start next morning.

On the long drive back to the Museum, Claus and I agreed that it had been a fine summer. Rather exhausting, but extremely rewarding scientifically. And we were looking forward to some leisurely fishing on the French River where we would continue our underwater search of the old canoe route of the voyageurs.

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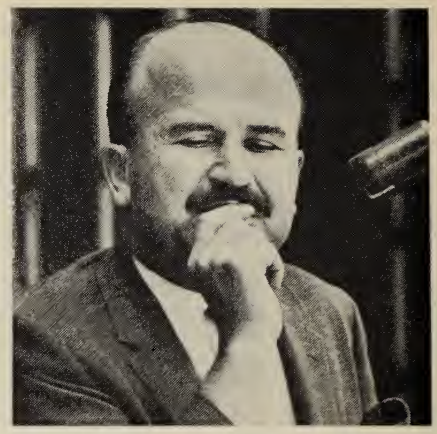
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ELWY YOST TALKS ABOUT TV IN EDUCATION

(Continued from page 18)

can use live actors, hosts, moderators, film, beautiful pictures. It can use models — a model of an engine or of a mountain range.

And, returning to my first point, the face on the screen looks right at you even if you are in a crowd of fifty people. There is a remarkable one-to-one relationship that can be hypnotic.

What's left for Teacher to do?

Before each program the teacher receives extensive notes, a complete rundown on content. There are suggestions about how the class can be prepared for the program and how it can be followed up.

If a teacher doesn't like our program, or if the pupils don't like it, she can jolly well turn it off. This is a precarious world even in educational television. There's no one to insist that they look or listen. And I might add it takes a teacher who is interested, who is very much alive, to prepare the students adequately before the program starts.

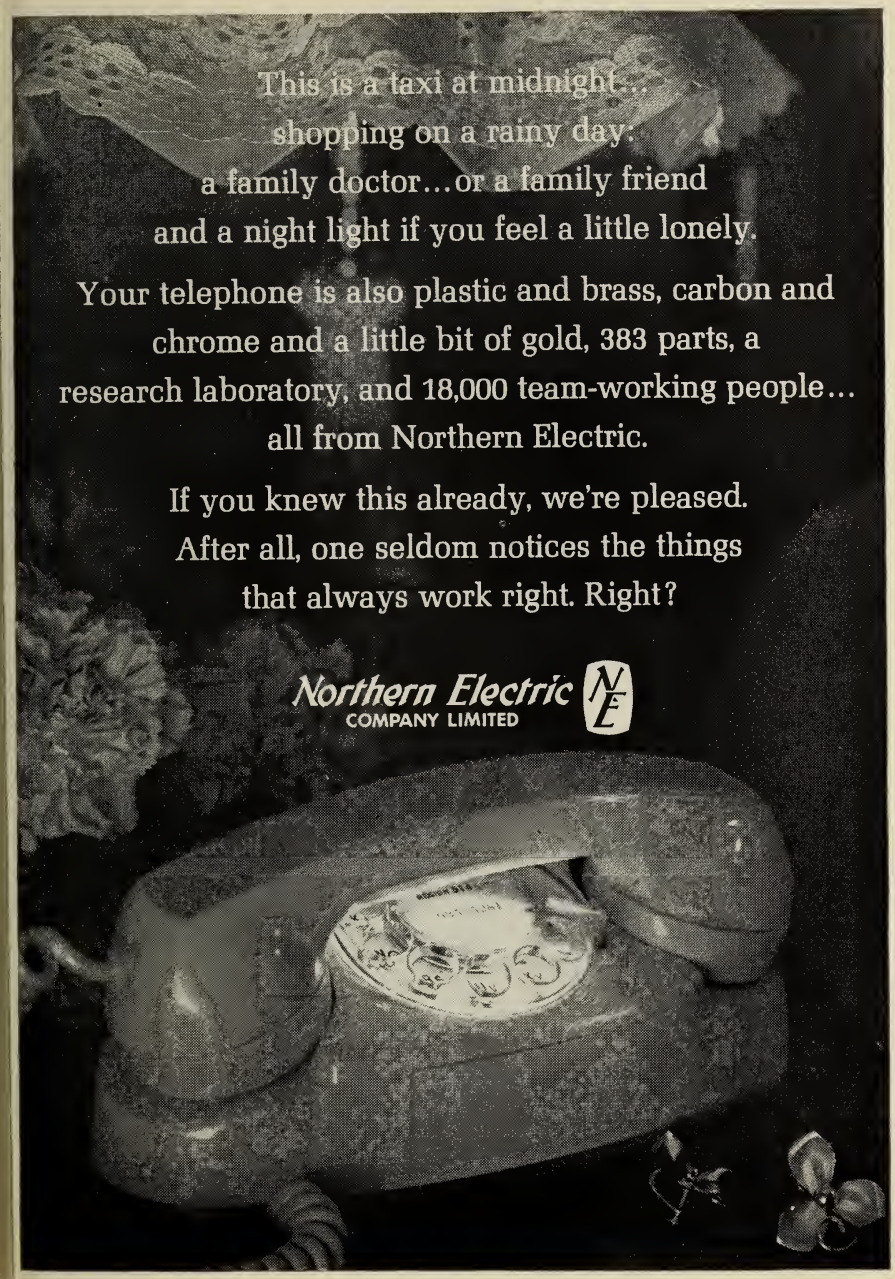
There's no point in a teacher merely stating, "There's an ETV program starting at 9.30: the class may go down to the auditorium and watch it". Then, when they come back: "How did you like it? Good! Fine! On with the lesson". I'm not hopelessly idealistic. I know that happens sometimes. But the role of a teacher who takes full advantage of an ETV program is a powerful one.

Comments from the classroom teacher are extremely valuable. Was the program right for the grade level? Did the studio teacher present his points clearly and hold the pupils' interest?

It is in the classrooms that we find our studio teachers. We use actors, too, but only when acting is involved.

A good many high school students watch commercial tv at night. Are they likely to be bored by ETV?

In one sense this is competition but


This is a taxi at midnight...
shopping on a rainy day:
a family doctor...or a family friend
and a night light if you feel a little lonely.
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After all, one seldom notices the things
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we shouldn't look on it that way. I remarked to a friend the other night that it isn't enough to turn out good ETV programs; we should give courses on how to view them. They must be viewed differently from commercial programs (which I thoroughly enjoy). Commercial television entertains and relaxes me. Many of the programs can be compared with sleeping pills — you sit back and it's a pleasant dream — it's fun. With educational television we're not in the entertainment business. The programs should be interesting, but the student must give voluntarily and actively of himself. He must concentrate on the detail and relate this to the lesson he is taking in class. It's another kind of thing.

If we have enough good visual effects, if he will meet us halfway, if a good classroom teacher gives the program a proper frame so that it becomes an integral part of the work she's covering, the student won't be bored.

How do you create your programs?

I work with teams of teachers. In 1964 I approached all the superintendents and secondary school principals in Metropolitan Toronto, and through the principals sent questionnaires to every teacher. There was quite a response: more than 500 were willing to play an active part. From them I selected 60 or 70 in the five areas of study I've mentioned — English, history, geography, maths and science. We meet regularly and plan the programs. They decide on the film content and write the teachers' notes. They write scripts and then use them as studio teachers. They do quite a job. And that's how I create the programs!

For any given program we'll have a meeting. Last January we were planning for 66/67. At a meeting of the history group a teacher came up with the idea that we should do something about the history of railroads next year. As it will be our Centenary Year, patriotism will play its part. But we should also at that time take a cool analytical look at ourselves. It shouldn't be all eulogy; it should also be a re-assessment. Through a program on railroading we could learn in an intriguing way something about what we once were, are now and where we're going. It would be healthy propaganda for this country.

We discussed the idea in several sessions and chose the teacher who would write the program. He has been working on the script and other people are researching film clips of old trains and other graphics back to the days of Sir John A. From its early stages, and with myself in a supervisory capacity, a professional producer at CBC has been a full partner. He is working closely with the writer and one day will produce the half-hour special in a studio.

What is your relationship with CBC and CFTO?

Well, without them there would be no educational television here. We owe them a tremendous debt. Half my programming is created in co-operation with CBC (CBLT being the



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local outlet, of course) and half is created in co-operation with CFTO.

These two broadcasting organizations donate the services of producers and technicians, the studio time, the lighting, many, many things — all the indirect expenses. They also telecast the programs on given Wednesday and Friday mornings. This is a tremendous contribution to the community on their part.

META takes care of the direct expenses, paying for writers, casts, the basic visual effects, rental of special films and so on.

What have been some of your favourite productions?

I loved them all — and was very proud of a number of them. I can't cover all of these.

Last year we did a two-part series called The Fourth Dimension which was very exciting. The idea was not merely to duplicate what was being taught in mathematics in Grades XII and XIII, but to extrabolate — to extract some of the basic principles being taught in those years and to use them as a guide for an imaginative journey into a kind of Einsteinian-Riemann world of the fourth dimension. What is the fourth dimension? Is it purely time? Would a fourth dimensional image of me be all of me this morning as I might appear in a succession of motion picture films? Most ingenious.

A teacher, a very good teacher named Pete Caldgrove — I would call him Peter but he insists on being called Pete — of Forest Hill Collegiate, was the creator of the program. He had been giving this lecture for about 25 years and he had no television receiver in his home. So when we asked him to do the script, we expected it would turn out to be straight talk without embellishment. But we were wrong. He did it in two parts and produced tremendous scripts — extremely visual. They called for walls to dissolve in the studio and for other magical happenings. Perhaps it was a good thing he hadn't been influenced by commercial programs after all.

The programs were given an enthusiastic reception in the schools and an immediate demand was heard for more that would feed the imagination. In addition to dispensing a certain amount of informational knowledge we should do many more programs

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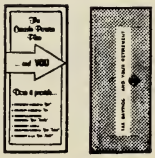
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of this nature. Feed the imagination should be our creed.

Another good series was Worlds of Geography which we produced last year in three half-hour specials. This took pupils on an imaginative journey through the world of map-making, the world of meteorology (we had Percy Saltzman on that program), and the world of geology.

We've started another series that will be seen once a year for ten years. This most ambitious undertaking is called Great Debates. It began in '64 with The Factory Act of 1833. The British Parliament of those days was recreated in a studio. Actors were hired. The result was a microcosm of the rather wretched conditions that existed in England at that time. We tied in conditions that exist today.

This past year we did Part II, the Confederation Debates of 1865. And next year we are doing the Conscription Debates of 1917.

We have another history series called A Study of Isms. We have explored nationalism and communism. This year we are going to Montreal to explore separatism.

Another special that gave us much satisfaction was the history of the mystery story from Edgar Allan Poe to Ian Fleming.

In a program called Murderer, Martyr and Masochist, two teachers discussed controversial aspects of Macbeth and others — the camera panning at appropriate moments to Martha Henry and Powys Thomas who acted out historical scenes. This proved to be a happy marriage of

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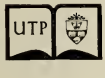
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pedagogical argument and the theatre.

We've had success with series done in co-operation with University of Toronto. I was particularly pleased with one called Key to the Door of Life, written and presented by Professor N. P. Badenhuizen.

How are the attendance figures at showings in secondary schools?

They're good but they could be better. One of the biggest snags is caused by timetables. A moment ago I mentioned a good program on map-making; this would have been perfect for Grade XI pupils. But how many were in a geography class when that program was shown at 10 a.m. on a particular Wednesday morning? Some would have been taking physical education, others maths, biology and so on. In such cases the principal may permit students to leave their scheduled classes for the program — but how does this go down with a French or science teacher who finds himself staring at rows of empty desks?

This is a thorny problem, but it will be solved. On the market now is a machine called a videotape recorder which takes the picture and voice off the air when broadcast, permitting the program to be repeated at any time. Some schools in Metropolitan Toronto have these machines now and as production increases and

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Where did ETV start?

In the United States, of course! The first programs were broadcast from a station in Houston, Texas, in 1953. Now the United States has 125 television stations devoted entirely to education. It's a remarkable thing: all through the States these stations are creating programs for pre-school children, elementary schoolchildren, secondary schools, colleges and adults. And they're doing a great job. A typical ETV station has about 26 full-time and 10 part-time employees. Its programs total 9½ hours five days a week. More than half of its revenue comes from parent educational institutions, less than a quarter from contract services to schools and others, and the rest in gifts and grants.

And how many ETV stations have we in Canada?

Alas, not one — not a single television station devoted entirely to education. But a growing number of ETV programs are going on the air. There is considerable activity in the Maritimes and in Quebec. And there are tremendous developments in British Columbia. From 18 to 30 educational districts in the interior will be linked to studios in Kamloops by closed circuit. Another provincial effort is being spearheaded in Ontario by the Honourable William Davis. And at the national level, the CBC is making educational television a growing force throughout the country.

Where does META fit?

As its name, "The Metropolitan Educational Television Association of

Toronto" implies, META is on a third level, the regional level. META began in '59. Dr. D. Carlton Williams, your Vice-President for Erindale and Scarborough Colleges, was the founder. He and Bruce Adams, who heads up Teaching Aids for Toronto Board of Education, brought in Arthur F. Knowles from the National Film Board — a man with years of experience in film and communications — and META was in business.

Thirteen school boards in the area and 14 other cultural institutions make contributions to META on an annual basis. We have three divisions: elementary schools, headed by Ronald Dodge; secondary schools, headed by myself; and adult telecasting headed by our Executive Director, Mr. Knowles. Between us we turn out 300 half-hour programs each year.

We work in close co-operation with school boards, superintendents, principals and teachers in this area. The educators who live and teach in Metropolitan Toronto have a say in what kind of educational programs appear on television screens in their bailiwick. We don't create programs to be seen by strangers thousands of miles away. META creates programs for here and now.

Now please peer into your crystal ball and tell us what you see for educational television in the future, let us say in a hundred years.

Dear me — a hundred years. I think our descendants will see schools pretty well decentralized to the home. I suspect each family will have its own educational console and that

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Johnny will go down to his lessons on a button system. This seems terrible to me because even though I'm in ETV and I'm dealing with magic, magic images, I love the idea of a teacher standing in front of a class. I'm sure Johnny still will have a confrontation with a real live teacher — but maybe only once every week or two to assess and discuss what he has absorbed.

What I would call the bread-and-butter aspect of information in physics, history and so forth would come to him by tape beamed from a central studio or perhaps mailed to him. He would get his educational-television lessons from a studio by pressing the right buttons.

I think this system will be forced on us in time because of population problems. Our over-populated world is going to become even more so.

You feel this pattern will apply to children of all ages?

Perhaps not for the very young. They will still need the human contact, the discipline that only a teacher can provide. But as the pupil gets older, electronics will take over.

It will be a much more enchanting world for teachers. They will be truly creative people, putting their lessons on tape, preparing for their television performances. They'll have time for philosophical pursuits. They'll progress mentally and socially. For the teacher, life will be marvellous.

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MEET VARSITY'S NEW DEAN OF MEDICINE

(Continued from page 24)

field and in field dressing stations and he was later awarded the Order of the British Empire for his work.

The war over, Dr. Chute in 1945 became resident in the New England Deaconness Hospital with the Joslyn Service that specialized in diabetes and other endocrynological problems. From 1946–49 he was in private practice as a paediatrician, a consultant at the Toronto Hospital for Sick Children and a part-time clinical teacher in the University of Toronto's Department of Paediatrics. In 1949, he accepted a full-time university appointment and in 1951 became Professor of Paediatrics and Chief of Paediatrics in the Toronto Hospital for Sick Children.

Dr. Chute has been a member of the Medical Research Council of Canada and chairman of its Clinical Investigation Committee and its Committee on Growth Hormone since 1960. His many research interests specially include diabetes and glandular problems.

In 1939, Dr. Chute married Helen Reid, a medical graduate of the University of Alberta. Dr. Helen Chute, now a paediatrician on the staff of the Toronto Hospital for Sick Children, is well-known also as a writer under her maiden name. Her latest book, "A World Away" (Ryerson) tells of her experiences with the 1965 medical expedition to Easter Island in the Pacific. The Chutes have two children. Judy, a U of T Anthropology graduate, is now working for her doctorate. Douglas has just completed his final year at the University of Toronto Schools.

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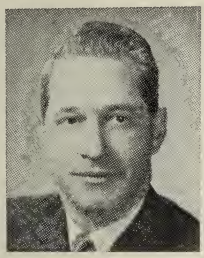
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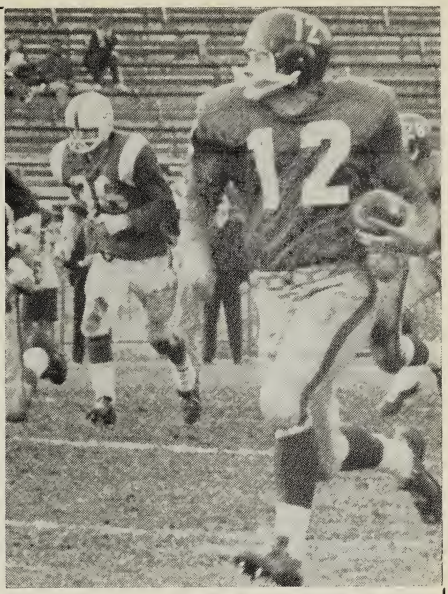
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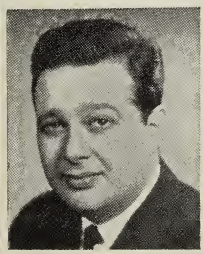


Most of us are familiar with the great Varsity football teams. Practice makes perfect (almost). After practising together several years, a team attains a fine degree of co-ordination. When a few players graduate, the winning combination is often destroyed. Business has its key men also. These are the "decision men" that are highly important to their firm. If one should die, it would take time and money to replace him. Modern business procedures dictate that the value of "key men" be insured by "key man" insurance. It's a wise move.

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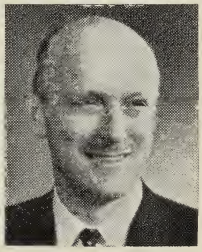
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A father-and-son moment in Convocation Hall

One meeting of eyes, one clasping of hands had extraordinary significance fo the Chancellor when he conferred degrees on successful candidates in th Honour Courses of the Faculty of Arts and Science in June. In this photograp by Bob Lansdale, Andrew Omond Solandt kneels before his father to receiv the Bachelor of Arts degree in psychology.

VARSITY

GRADUATE

UNIVERSITY OF TORONTO ANNUAL REPORTS 1966



Sunnybrook Hospital joins University of Toronto family: the Honourable John P. Robarts, Prime Minister of Ontario, and Budd H. Rieger, Chairman of the Hospital's Board of Trustees, at the transfer-of-deed ceremony in November

VARSITY
GRADUATE

Volume Thirteen **Number Two**

February 1967

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The Editor of VARSITY GRADUATE is Kenneth Edey, director of the University's Department of Information. The other members of the department are Lawrence F. Jones, assistant director; Leonard Bertin, science editor; Crawford Grier, humanities and social sciences; Mrs. Winogene Ferguson, information officer; Mrs. O. D. McMeeken, production supervisor.

Other periodicals published by the Department of Information are VARSITY NEWS, in October, December, March, and May for graduates and former students; and STAFF BULLETIN, monthly from October to March.



Sunnybrook Is Key to More Doctors and Nurses

Negotiations for the acquisition by University of Toronto of Sunnybrook Hospital, Canada's largest centre for the care of war veterans, were in their final stages as the 1965–66 academic year ended June 30. Within a few weeks they came to a successful close. On October 1 the University took possession.

Years of planning and persuasion with Dr. Henry Borden, Chairman of the University's Board of Governors, as chief negotiator lay behind this transaction. Its meaning in terms of the University's future and service to the Ontario community was spelled out by speakers at the transfer-of-deed ceremony held in the hospital's newly-named Warriors Hall on November 21.

The Hon. John Robarts, Prime Minister of Ontario: "Sunnybrook, the first university-owned hospital in this province, will set the pattern for university hospitals now planned on other Ontario campuses and elsewhere in Canada. With this important acquisition, University of Toronto, which already has an excellent reputation as a medical school, will become capable of offering training, teaching and research facilities comparable with the finest anywhere in North America".

Budd H. Rieger, Chairman of the Hospital's new Board of Trustees: "Sunnybrook will eventually become the largest active treatment hospital

in the Metropolitan Toronto area with upwards of 1800 beds, including 600 for civilians. It may well challenge Vancouver as the largest general hospital in Canada. While serving both civilians and war veterans, it will also make substantial contributions to the teaching of students and as a research centre. Eventually, we hope to see the Sunnybrook area as one of the most up-to-date medical centres on the continent".

250 in Each Medical Year

Dr. John Hamilton, the University's new Vice-President for Health Sciences: "The full range of medical service will be offered to the people of the surrounding area. Every experience necessary for the training of undergraduates in medicine will be available and will make it possible for the University to enlarge its undergraduate course from 175 students to 250 per medical year.

"Sunnybrook will be the major training centre in other disciplines of health sciences, notably nursing, enabling the University to meet the need for university-trained nurses in Ontario."

Reach into the Home

"The prime objective," Dr. Hamilton continued, "will be provision of the highest quality health care with extension of health services beyond the hospital and into the home. This means providing training in many other disciplines, including medical social work, clinical psychology, rehabilitation and other disciplines.

"Training such paramedical personnel in one centre will make it possible to teach the inter-dependence of each on the others and to integrate their functions. The purpose is to form a group or unit, each member of which will contribute a special skill towards meeting the total health needs of the individual private citizen as well as the veteran."

The Hon. Roger Teillet, Minister of Veterans Affairs: "We were faced with ageing clientele and facilities which were making it difficult to recruit highly qualified doctors and nurses. The obvious answer was to integrate our veterans into a more normal hospital population where they would receive medical treatment of a high standard along with other members of the community."

Veteran Comes First

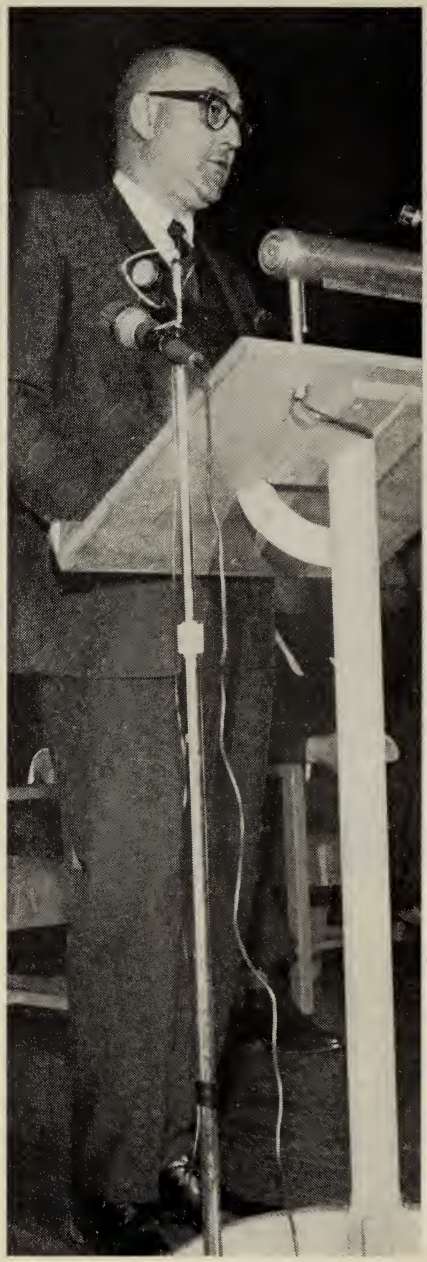
The advantage to ailing veterans in being part of a hospital community committed to wide-ranging research was stressed throughout the Sunnybrook negotiations; in his remarks at the transfer ceremony, Mr. Rieger assured veterans in the audience — a number were in wheelchairs — that their treatment and comfort had top priority in the hospital's plans. Up to 1200 beds will be available for them as long as the need exists. The first major construction on the property will be a building designed for upwards of 400 veterans who are chronically ill or require domiciliary care.

"Sunnybrook was planned and built to meet a wartime emergency," Mr.



A Silver Dollar and a Golden Promise

Two years of personal negotiation and hard bargaining at three levels of government ended for Dr. Henry Borden when Veterans' Affairs Minister Roger Teillet, *left*, accepted his silver dollar in exchange for the deed to Sunnybrook Hospital. The exultant Chairman of the University's Board of Governors had no "prepared text" for this occasion – the words came straight from his heart. "Sunnybrook," he said, "can become one of the greatest medical centres in the Western World. This is our goal. This is our aim. This is what we will achieve."



The Board of Trustees of Sunnybrook Hospital, headed by Budd H. Rieger, a U of T governor, *left*, has eleven other members who are either on the Board or are senior administrators at the University. They are:

Dr. Henry Borden and President Claude Bissell (at *right*) with the Hon. John Robarts and William Allen, Chairman of the Corporation of Metropolitan Toronto;

Dr. A. L. Chute, Dean of the Faculty of Medicine;

Dr. John Hamilton, Vice-President for Health Sciences;

Sydney Hermant;

the Hon. Mr. Justice Arthur Kelly;

C. Mackenzie King;

the Hon. Daniel A. Lang;

George E. Mara;

Frank R. Stone, the Vice-President (Administration);

the Hon. J. T. A. Sullivan.

C. F. W. Burns is Vice-Chairman of Sunnybrook's Board, other members from outside the University being:

Norman Brook Bell,
Murray Bosley,
Harvey A. Cotnam;
Richard C. Meech, Q.C.,
Arthur S. Pattillo, Q.C.,
Aubrey A. Russell,
Dr. R. W. I. Urquhart.

On Sunnybrook's Board as ex-officio members are the President and Vice-President of the Medical Staff (Dr. P. E. Ireland and Dr. J. M. Shapley) and the Chairman of the Medical Advisory Committee (Dr. W. E. Boothroyd).



Rieger continued; "it was designed with large wards to accommodate sick and wounded veterans returning from the battle-fronts. No babies have been born at Sunnybrook during its 20 years. There has been no need for departments of obstetrics or paediatrics — no call for an emergency ward for automobile and other accident cases.

"Now the facilities of a general hospital must be built in. We must provide for more research and the instruction of medical students at the undergraduate and graduate levels. Major renovations are necessary. These will involve tearing out some walls, partitions, even sections of floors.

"And while all of this is going on, Sunnybrook will continue to care for the hundreds of veterans who are here now and for others who will be admitted. I can assure you that the trustees and medical heads at Sunnybrook and the University's Faculty of Medicine will not permit the work to disturb our veteran patients or interfere with their care. As a result, what might have been accomplished in a matter of months will take much longer.

"The trustees of this hospital are dedicated to all of the objectives I've outlined. But I would mislead you if

I were to say complete renovations can be made before the early 70s. Were we to try to achieve our goals as quickly as we have been asked I suspect many of us would become patients here ourselves!"

Re-born at Midnight

To appreciate the Sunnybrook situation one should consider the headaches involved in discharging a thousand or more patients overnight and then immediately readmitting them on a different basis. That assignment faced the hospital's administrative staff on September 30 when Sunnybrook ceased to be a federally operated establishment and became a public general hospital, wholly owned by the University of Toronto and operated by its own Board of Trustees.

Patients weren't the only problem. As the clock struck midnight, the hospital, in theory at any rate, lost its entire staff and had to acquire a new one. It was the signal to begin planning for a much broader spectrum of patients.

"No-one is going to pretend that it was easy," Dr. Norman Bradford, the medical director, said recently. "Most of us worked nights and weekends to cope with the tremendously increased administrative load but, gradually, everything sorted itself out."

In the weeks that followed, trustees and administrators, medical staff and members of the University's Faculty of Medicine have all been taking a hard look at the multiple tasks ahead.

"In terms of service to veterans, the public, and medical students, this hospital is in a unique position in Canada," said Dr. J. Kemp Morrison, the executive-director (who was superintendent under the Department of Veteran Affairs from '62 to '66).

The subject was pursued by Dr. Bradford. "There is no normal parallel", he said. "In ordinary circumstances, when a new general hospital is to be opened, there is a period of several years in which to plan buildings, decide what staff will be necessary and then recruit them. When the hospital is eventually ready to start admitting patients, the build-up is progressive. At Sunnybrook, everything has to to be done at once."

The Planners

The first step has been to establish two key committees, a Medical Users' Committee, representing the medical staff, and an Administrative Users' Committee to study organizational, staffing and financial problems. The medical committee is chaired by Dr. John F. Paterson, head of the department of medicine, and the administrative committee by Thomas Hanson, director of finance. When other groups are formed to deal with specific problems, their operations will be co-ordinated by George Bates, an appointee of the Property and Facilities Planning Committee of the Board of Trustees.

As needs come into focus, the hospital is recruiting the people to meet them. "We start with an advantage", said Robert Grant, director of personnel and public relations. "This will be

a very interesting place to work – one of the best-endowed medical and teaching institutions on the continent."

Under the heading of renovation are specialized plumbing and other engineering services that could not be included in a building rushed to completion in wartime for military needs – but which are necessary for a general hospital in the 60s. Ahead of them on the priority list is the building for veterans requiring domiciliary care, this cost being underwritten by D.V.A.

A second new structure that will add distinction to Sunnybrook was announced by Mr. Rieger at the transfer ceremony. "We plan to build on the property a large office building, or clinic," he said. "It will have suites for general practitioners and specialists. The doctors concerned all will hold appointments at the hospital and will be members of the University's Faculty of Medicine.

"The Red Cross Lodge that fronts on Bayview Avenue will continue to provide facilities for families of veterans as it has so well in the past. The prosthetic unit also will continue on the property."

The most urgent requirement of all is a master plan that will foresee and allow for all of the hospital's needs and permit the most efficient use of its many facilities. As February began, Sunnybrook's new committees were earnestly addressing themselves to this task.

The hospital stands on what was originally Sunnybrook Farm, a tract of 150 acres owned by Joseph Kilgour who was a major in the Queen's Own Rifles and famous for his stable of thoroughbred horses. In 1928, three years after the Major's death, his widow gave the property to Toronto as a park – the biggest gift of land in the city's history.

In 1944 the Kilgour heirs agreed to the transfer of the one-time farm to the Federal Government as the site for a veterans' hospital. Then in 1966 the heirs accepted further amendments to the deed of gift: the transfer by the Federal Government of 33 acres to University of Toronto and of the rest (118 acres) to Metropolitan Toronto for parkland, thus going full circle to meet the wishes of the original benefactor.

Hospital Has 183 Acres

Altogether, with the acquisition of other Crown land and two private estates, Sunnybrook Hospital owns 183 acres. The property has a frontage of more than 2000 feet on Bayview Avenue and runs east for approximately three-quarters of a mile.

At the transfer-of-deed ceremony in November a plaque was unveiled commemorating "the transfer of Sunnybrook Hospital to the University of Toronto by Her Majesty the Queen in right of Canada with the gracious consent of the heirs of the late Alice Margaret Kilgour" (*see photograph on the cover*). The plaque also notes the pledge of the Board of Trustees to recognize "the priority rights of the needs of veterans as long as they shall continue".

A second plaque records the decision to give the name of Warriors Hall





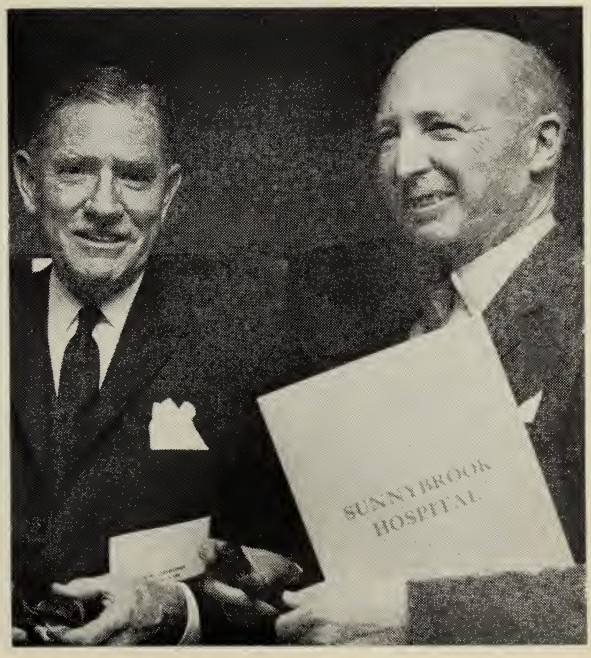
Trustee Sydney Hermant, *left*, was president of the Students' Administrative Council and won his "T" for tennis, later served on the University Senate and as an Alumni officer, is now a member of the Board of Governors. Another trustee who is also a governor and a T-holder is the Hon. J. T. A. Sullivan, physician and surgeon, and member of the Senate of Canada. Dr. Sullivan, who is seen with Mayor Service of North York, *extreme right*, played goal for Varsity Grads when they won their Olympic title.

to the auditorium in which the ceremony was held. It was unveiled from his wheelchair by K. C. Langford, Q.C., Chairman, National Council of Veterans Associations in Canada. Arthur Adams, a vice-president of the Royal Canadian Legion assisted him.

On November 21 the spotlight shone bright on Sunnybrook Hospital. But, as the forty members of the platform party and many others in the audience were well aware, ground even then was being cleared on the St. George Campus for a $36-million medical sciences complex, another indispensable element in the University's program of expansion for the Faculty of Medicine. And this entire U of T effort should in turn be seen in the perspective of all that is happening in the field in Ontario:

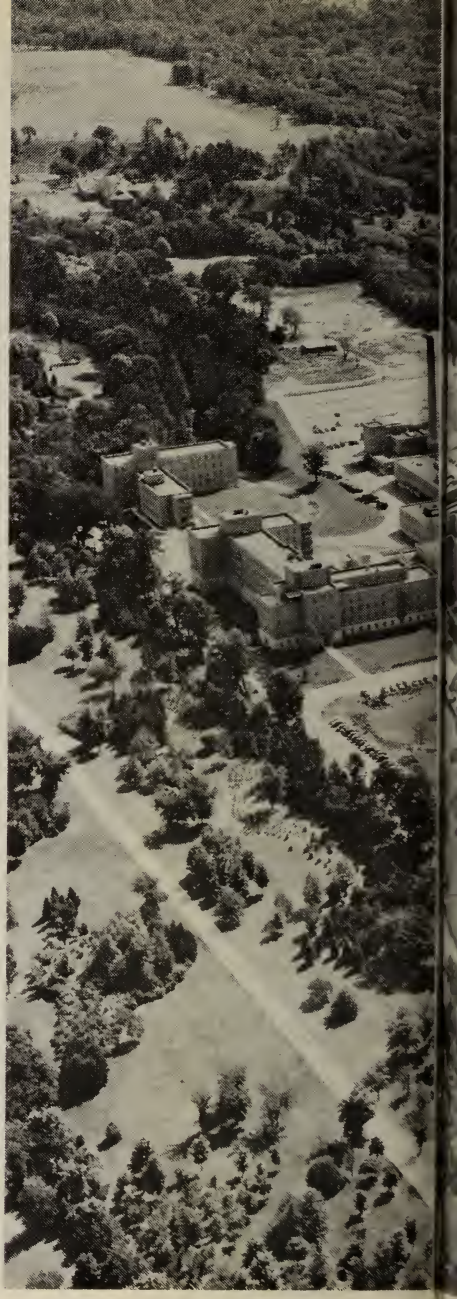
"It is significant," said Prime Minister Robarts, "that this ceremony follows by just two years the announcement made by the Ontario Government of the inception of a program of Capital Aid for Health Resources Facilities. This program

Hon. Matthew Dymond, *2nd from right,* Minister of Health for Ontario, with three trustees: the Hon. Mr. Justice Arthur Kelly, Dr. John Hamilton, and Dr. A. L. Chute.



Still another trustee, governor and T-holder (for hockey) is C. Mackenzie King, seen with Dr. R. Ian Macdonald, *extreme right.* Dr. Macdonald is Associate Dean of the Faculty of Medicine.

Right: Sunnybrook Hospital and its surrounding parkland. This view is from the west. A segment of Bayview Avenue may be seen in the right foreground.



stemmed from a two-year study of the problem of medical and dental teaching facilities in Ontario."

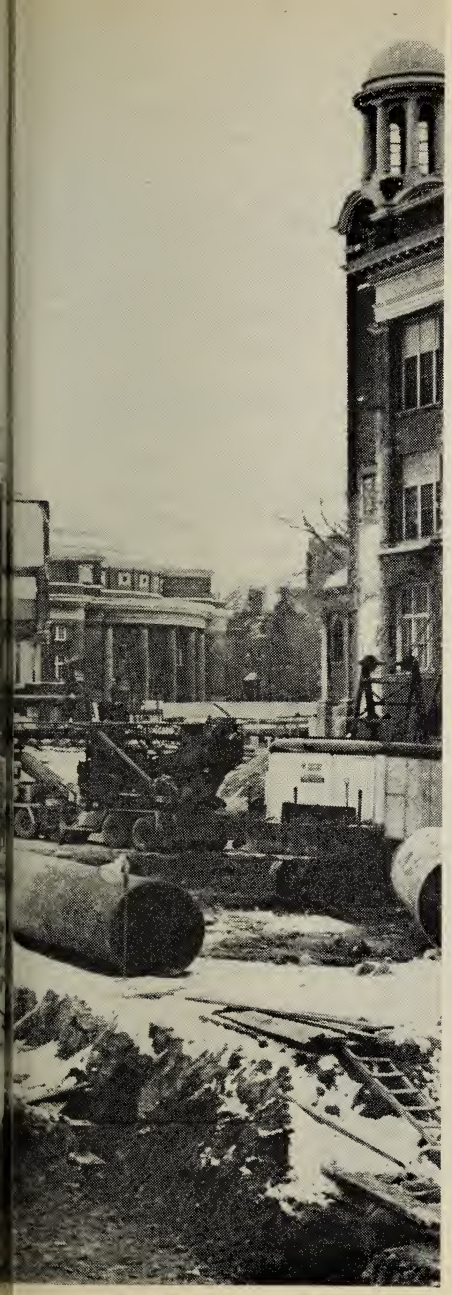
Advance on Broad Front

"Among other things," Mr. Robarts continued, "we envisaged the expansion and renovation of the medical school at University of Toronto to accommodate an additional 75 medical students annually. Plans were also announced for a new medical school at McMaster University and a new health sciences building and the renovation of the medical school facilities at Queen's University. Two new teaching hospitals at McMaster and at the University of Western Ontario, were outlined, as was a new school of dentistry at Western.

"Much progress has been made in the intervening two years. In addition to the acquiring of Sunnybrook, demolition now is under way on the University of Toronto campus for the expansion of the health science faculties. A large teaching unit is almost ready for opening at the Wellesley Hospital, here in Toronto. Enlargements of teaching facilities are either being planned or under way at the Womens' College Hospital, the Toronto General Hospital, St. Michael's Hospital, the Hospital for Sick Children and the new Mount Sinai Hospital. The University of Western Ontario has built its new medical school, is building its dental school




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Left: Area of the new medical sciences complex on the St. George Campus is indicated in this view from the Queen's Park side. The Biology building (1888) had gone and the old School of Practical Science building (1878) had just about gone when the picture was taken. Site of the present Medical building (part of one tower may be seen at right) will not be needed until the second stage of construction.

and is planning its university hospital. Approval has been given to the new health sciences centre at Queen's. Planning is well advanced at McMaster."

Ontario's Goal

Summing up, Mr. Robarts said completion of the program is expected to provide places for approximately 900 additional medical students and 400 additional dental students. This year there are 383 medical students (175 at U of T) and 131 dental students (all at U of T) in their first year of clinical studies at Ontario universities.

"Ontario," Mr. Robarts concluded, is a dynamic, rapidly growing Province. The need to train more and better-equipped doctors, nurses, dentists and all of the other people required to maintain a high standard of health services is obvious and urgent. The acquiring of Sunnybrook by the University of Toronto is an extremely important development."

Anatomy of a Hospital

The sod was turned for Sunnybrook Hospital on Armistice Day, 1943, and Corporal F. G. Topham, V.C., 1st Parachute Battalion, laid the corner-

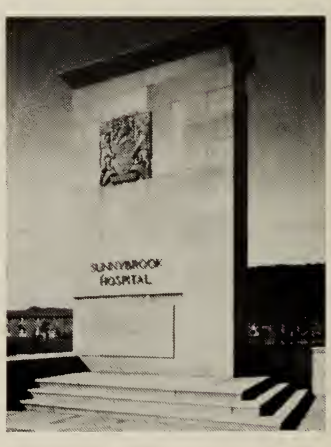
stone two years later. The first wounded veterans were moved into the partly finished building in September, 1946. In June, 1948, the completed hospital was opened by Prime Minister W. L. Mackenzie King. It was the largest active-treatment hospital in Canada and today is second only to the Vancouver General.

The building is of grey manganese brick trimmed with Queenston limestone. It has 2800 rooms, and 2900 windows to wash. It has 21 acres of floors, 125 miles of pipes, 1000 miles of wiring. The building alone cost almost $14 million (and that was 20 years ago).

In its first five years, Sunnybrook treated 50,000 bed-patients and 200,000 out-patients.

Civilian occupation has not been unknown. In 1964 a 43-bed section was taken over by the Wellesley Hospital Arthritic Unit in conjunction with the University's Faculty of Medicine and the Canadian Arthritis and Rheumatism Society. This salient was recovered by the military (without a shot being fired) when the arthritis unit withdrew to permanent quarters in Wellesley's new wing last year.

And now the civilians will be back — this time in strength — to join sailors, soldiers and airmen in an enterprise promising enormous benefits for Metropolitan Toronto. There will be new sights in the hospital's three miles of corridors. And there'll be new sounds — including the wail of Sunnybrook's first baby.



In this slightly condensed version of his final report as Dean of the Faculty of Medicine, Dr. John Hamilton, now Vice-President for Health Sciences, spells out the role of the University Teaching Hospitals

Research and Teaching Mean Better Care for the Patient

WORK ON THE SITE for the new medical building is now under way (July, 1966). The building will contain approximately 650,000 square feet gross, and will extend from King's College Road east to Queen's Park Crescent, replacing the School of Practical Science, the Biology building, and finally the medical building. An enormous structure designed to conform to the average height of buildings around the campus, its mass has been broken into three components with the largest bordering Queen's Park. The appearance of the campus will be greatly changed, but in the opinion of many of my colleagues it will be a change for the better as the buildings being replaced are without distinction. The architects' drawings of the new building promise that the south end of the campus will be dominated by no mean edifice.

In function, the building will be truly a health sciences centre for the University, providing education in the basic medical sciences to students in Arts and Science, Medicine, Dentistry, Pharmacy, Nursing, Food Sciences, and Physical & Health Education.

Progress in relation to expansion of teaching and research facilities in hospitals has not been as rapid because the problem is more complicated. Service to the community is the prime function of the hospital whether it be a teaching hospital or not, but when teaching is part of the function of such a hospital, range and character

of service provided to the patients is greatly extended. The clinician who is attracted to the teaching hospital is one with an enquiring mind that continually seeks and probes to find out what is causing disease. He wants and demands facilities to do research and the time to do it. The hospital without both experimental and diagnostic laboratories that are so necessary to the clinical research cannot retain its top flight clinical scientists. They move to the hospital that will encourage and support investigation and the kind of medical care that results from it, for there is no doubt that the quality of medical care is directly related to research. The enquiring mind of the clinical scientist is directed beyond his immediate laboratory studies to improvement in medical care of the patient and ultimately the prevention of his disease. Almost equal in importance to the provision of research facilities is gaining the time of the clinical scientist to use them. This can only be achieved through relieving him of the necessity of earning all his income through the private practice of medicine. It is a pleasure to report that this latter fact has been recognized by the University, and during the past year a 40 per cent increase in budget was provided, almost all for academic salaries and principally in clinical departments.

The addition of research to the function of a hospital and the kind of staff that undertakes it, usually and in fact always results in pressures to create special diagnostic and treatment services, because the hospital becomes a referral centre not only for the immediate community but for a much wider geographic area. In most of our major teaching hospitals, approximately 30 per cent of the patients come from outside the city of Toronto. The quality of the medical staff is the key to the teaching hospital, not only in attracting patients, but in teaching at every level, including medical undergraduates, career training of medical specialists, continuing education of practising physicians, research training of clinical scientists and education of a host of paramedical professions. While the extent and degree of involvement of each teaching hospital in this centre varies in regard to its commitment to research and teaching, in each and every one they are of primary concern.

In planning the future development of a teaching hospital then, provision of research and teaching areas must be considered in the light of services for medical care of patients. Today this is no simple matter. The pattern of medical practice and care in the community is changing, with the general hospital providing more and more care of the kind formerly given by the general practitioner, this being imposed upon the specialized referral hospital increasing its dimension of service to that of a health centre.

In the opinion of the members of the clinical departments, this trend towards provision of comprehensive medical care will be enhanced through the introduction of subsidized health insurance, necessitating the develop-

ment of a new policy for the operation of the emergency and outpatient departments that will recognize the changing role of the hospital in the community. Ambulatory care departments or centres must be created to give treatment for 24 hours per day, staffed preferably by practitioners primarily concerned with family practice. Such centres will become of major importance in teaching medical undergraduates.

I hope that this brief account of the teaching hospital and its expanding role in the community will explain in part the tremendous task that is faced in planning at this time.

It is important to define the role of the teaching hospital in the community because pressures are being exerted by the medical profession at large to restrict and limit the activities and therefore the functions of the teaching hospital. What needs to be emphasized is that the changing role of the hospital is a response to the demands of the community, and not the medical staff of the hospital.

Two events of importance occurred during the past academic session, both assuring the orderly development of health sciences education in Ontario. . . .

The support given by government to the development of the medical schools and their teaching hospitals has made it very clear that Ontario can and should have the best medical schools in Canada, provided the staff can be trained and recruited. It is therefore a pleasure to report that the University of Toronto has successfully begun to recruit the increased staff needed to meet its expanding commitments to teaching and research. For the next academic session, 60 new full-time positions have been filled. . . .

The primary teaching hospitals of the University of Toronto, the Toronto General Hospital, St. Michael's Hospital and the Toronto Western Hospital, are each now deeply involved in completing plans that will meet the challenge of becoming what will be, in fact, one of four clinical schools. The fourth, Sunnybrook Hospital, has just been acquired by the University. These plans not only envisage the changing role of the major hospital in providing adequate research and teaching space, but also the changing service needs of the community.

Of the affiliated hospitals all are planning modernization or expansion, and are including major commitments to research. The Wellesley Hospital will open in 1966 its new wing incorporating research laboratories. The Women's College Hospital has completed plans and is now ready to begin new construction. The New Mount Sinai Hospital has gained approval of its tentative planning, as has the Princess Margaret Hospital. Lyndhurst Lodge is planning to move to a new site immediately south of Sunnybrook. In that area now are the Canadian National Institute for the Blind, the Crippled Children's Centre, and the Toronto Rehabilitation Centre.

With expansion of research and other facilities, the necessity of cooperation between various teaching

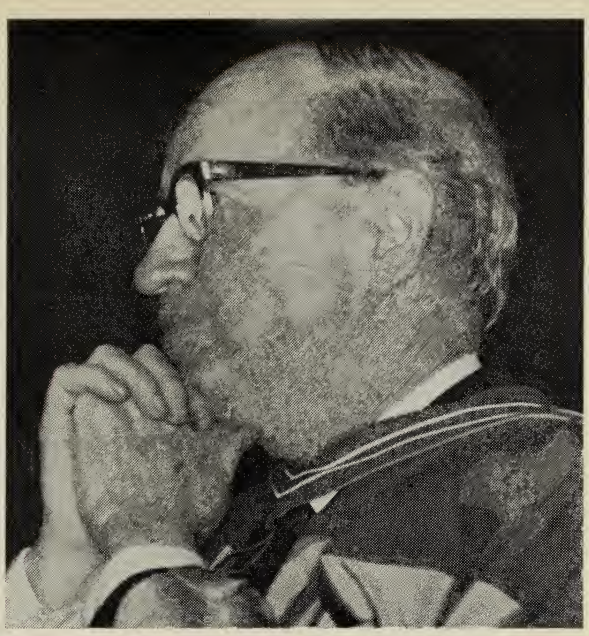
hospitals has become very evident if duplication is to be avoided. The meeting of a joint committee of the Dean and Chairmen of the Boards of Trustees of the teaching hospitals two years ago has paved the way for the establishment of a permanent committee to deal with hard problems of allocation of space and facilities.

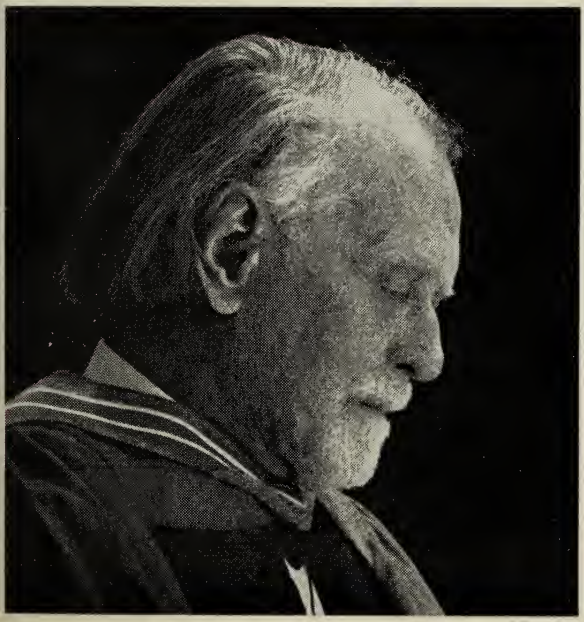
In parallel to the planning of space and facilities has been the further development of the curriculum, this past year under two committees, one basic science and one clinical with cross representation. Much progress has been made in clarifying the integrated course in normal function to be given during the first 18 months. The second phase of the curriculum to be given in the clinical setting has been slower in forming because it is, I believe, more complex.

Present indications are, however, that closer integration of all aspects of the latter half of the course are inevitable. The full implications have not yet been foreseen of the announcement by the College of Physicians and Surgeons of Ontario that compulsory internship need not be a rotation through all services of a general hospital. This, coupled with the recent notice from the Ontario Hospital Services Commission that medical students may be paid as summer interns, paves the way for radical changes in the duration of the school year as well as the curriculum. . . .

John Hamilton

Honorary Graduates of 1966





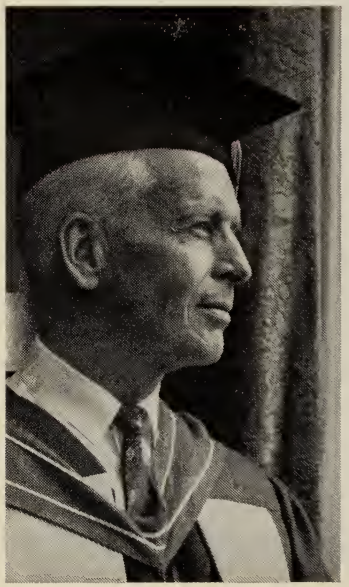
Above: Varsity graduate and Toronto author, Morley Callaghan spoke to Convocation and received the honorary degree of Doctor of Laws. In presenting him for the degree President Bissell called him a "sensitive historian of morals and manners, an artist enamoured of human beings".

Left: Zoltan Kodaly, Hungarian composer, conductor, teacher and folk song authority, received the honorary degree of Doctor of Music at a special Convocation which he addressed. He was here to deliver the MacMillan Lectures for the Royal Conservatory of Music Summer School.



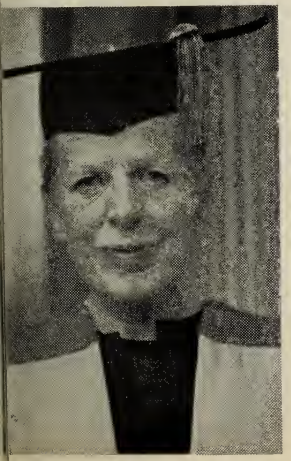


Above, left: Among others honoured: Sir Aubrey Lewis, Head of the Institute of Psychiatry, University of London, seen with President Claude Bissell; *above, right*: Michael Langham, artistic director of the Stratford Festival; *below, left*: Dr. J. D. MacLachlan, President, University of Guelph; and *below, right*: Dr. J. F. Leddy, President, University of Windsor.





Above: The Chancellor, Dr. O. M. Solandt, confers the LL.D. degree on Dr. James T. Phillips, President of the Associates of the University of Toronto Inc., New York. *Below*: Miss Kathleen Fenwick, Curator of Prints and Drawings at the National Gallery of Canada, and Dr. Roger Gaudry, Rector, University of Montreal, also were awarded honorary degrees. Dr. Gaudry addressed Convocation.





Retiring as the Dean of Arts and Science, Dr. Vincent Bladen writes of authority conferred from below rather than above – and how an emphasis on training in technique must not be permitted to kill the imagination

"Offer not a lump, even of gold, but a key"

In this, my last report, I want to state once more my conviction that the role of departmental chairmen is crucial in the maintenance of the health of the Faculty. May I first repeat what I said in last year's Report: "A good Dean can help to make more effective good chairmen, but he cannot make up for the deficiencies of a weak or a bad chairman. I have said that we want scholars to provide leadership. To give such leadership they need the quality which Harold Dodds identified as the quality needed for great university Presidents: 'A gift for sustaining a climate of intellectual inquiry and a zeal for quality.' They can delegate to others much of the administration but they cannot abdicate from leadership." I repeat all this because the discussion of University government that has been stimulated by the Laskin Report on the School of Graduate Studies, the Haist Report on such matters as selection of deans and chairmen, and academic tenure, and the Duff/Berdahl Report on University Government in Canada, seems to me to have been characterized by a dangerous distrust of chairmen, and incidentally of deans. Changes in the government of the University are inevitable and many of these changes can improve the effectiveness of the institution: but many that have been mooted involve checks and balances, some of a democratic and some of a bureaucratic nature, which threaten the vitality of the departments and discourage the initiative and leadership of chairmen. These suggested procedures would provide little protection against serious departmental mistakes, they seem to guarantee mediocrity rather than promise excellence.

The Duff/Berdahl Report provides an excellent basis for discussion of proposals for reform in University government, and I hope that there will be reform. Indeed much has already been achieved: the establishment of the President's Council was a major achievement, and it will soon be evident that the Council will take a major role in reform. My worry is that too little attention will be paid to the "Conclusion" of the Duff/Berdahl Report. I therefore propose to quote two or three sentences and to comment briefly on them.

> "Constitutional reform may improve a system of university government to a point but, in the last analysis, its successful functioning will depend more on the good-will and mutual trust of the participants. . . . Academics . . . are not the easiest of men. It is their professional duty to think and to express their thoughts . . . These are certain therefore to disagree, not only with each other but with those in authority . . . But the academic has one virtue corresponding to this defect (if it is a defect). His training should have taught him to disagree, even violently, without supposing that his opponent is a bad man."

The final words of the Report are these: I think they are of enormous importance:

> "If outstanding men are to be attracted to these positions [Presidents, Deans, Chairmen of departments] the faculty must be willing to extend its trust. On the other hand the administrators' readiness to share power will be a key factor in the building of that trust by the faculty. If the delicate balance is caught the spirit of governance that we mentioned will have been achieved."

Let me repeat: "the Faculty must be willing to extend its trust". And let me offer mild criticism of the phrase "readiness to share power". I feel that the phrase suggests a degree of power to be shared and a structure of authority that is unrealistic. Students of university government and particularly those concerned in the debates on reform that I foresee would do well to study Mary Parker Follett. In particular they should recognize with her to what a high degree authority is conferred from below rather than above, and how largely the function of the person in authority is to represent the views of his so-called subordinates and to fight at the next level for their views and their interests. I interpreted this as my role as chairman of Political Economy, and the Provost can testify that I fought. It is the role I expected of chairmen when I became Dean. The President can testify that I have fought. I alone can testify, and I hope I will be believed, that I fought as a representative of my colleagues, not as a power-hungry egotist.

In my reports during my tenure of office I have consistently argued that teaching and research are complementary and that graduate and undergraduate work are equally so. I have been worried, as have many of my colleagues, about the apparent "flight

from teaching". I have been worried lest the new emphasis on graduate work should lead to neglect (when it can lead to improvement in the quality) of undergraduate work, and I have welcomed the appointment of a Presidential Advisory Committee to inquire into problems of undergraduate instruction in the Faculty of Arts, welcomed it all the more warmly because of the choice of Brough Macpherson as chairman. I think I would like to say two or three things relevant to these matters.

First, let us not over-react and start a flight from research; let us not go to the extreme of publish *and* perish. Let us remember that good teachers of error are most dangerous people and that the readiness to present his views for the judgment of his peers in articles, books and addresses to learned societies is a duty of those who have the privilege of teaching undergraduate students. Second, let us remember that the prime function of the university is education and this means much more than teaching. Association with inquiring scholars who have little of the skills of teaching may provide a more effective education than attendance at lectures by highly skilled teachers of established knowledge. Sidney Smith talked of the difference between drinking from the fast-flowing stream and from a stagnant pool. My greatest "teachers" at Oxford were A. L. Smith and H. W. C. Davis. Of the former Kenneth Bell wrote: "He offered us an aperitif rather than a meal, and gave us not a lump, even of gold, but a key." Of the latter I once wrote: "I doubt whether he ever taught me anything but he made me so conscious of his own standards of scholarly excellence and integrity that I could never offer him anything less than my best." Of Alfred Marshall, Pigou wrote: "Marshall did not teach us; he talked to us in an interesting way about interesting things, and by that means developed in us some rudiments of intelligence." Third, may I say that I am thinking of education in a very broad sense. For many young people the most satisfactory atmosphere for growth, for full development of their talents, is the atmosphere of the University. We should try to select those for whom this is the proper soil; too many come who should not, too many fail to come who should. But let me go on to say that we must not think exclusively of those whom we educate to become our colleagues and successors as professors and research workers in the fields of their specialisms. John Buchan has Wee Jaekie explain to Alison Westwater in *The House of the Four Winds* that Cambridge had given him "peace to grow up". In an unpublished paper I commented as follows: "If we recognize that peace spelt leisure not idleness, and provided an opportunity for intellectual activity and for the exploration of diverse interests, we may feel that the novelist displayed considerable educational insight through the comment of his fictional character."

I have argued, and still argue, with conviction the virtues of the honour

(*Continued on page 41*)

REPORT OF THE PRESIDENT



CLAUDE BISSELL,
M.A., PH.D.,
D.LITT.,
D. ÈS L., LL.D.,
F.R.S.C.,
President,
University
of Toronto

To the Governors and the Senate of the University of Toronto

THE UNIVERSITIES of Canada are now engaged in a comprehensive programme of self-analysis of which the chief external signs are the appearance from time to time of the reports of commissions. These commissions may have a national, provincial, or institutional authorization. The activity in Ontario has been particularly lively; there are fourteen state-supported universities in the province, and an increasing sense of community has made them aware of common problems. The University of Toronto has been deeply concerned with institutional analysis; in part this is the result of size and complexity; in part, the natural outcome of a liberal tradition that sees no conflict between loyalty to an institution and criticism of its assumptions, methods, and goals.

I should like to comment upon the impact on the University of several reports that were received and discussed during 1965–66. Two of these were national in scope and were sponsored by national bodies, namely, the *Report on the Financing of Higher Education in Canada* and the *Report on University Government in Canada.* A third report was purely institutional in inspiration and framework; this was the *Report on Graduate Studies in the University of Toronto,* which was known as the Laskin Report, from its Chairman, Professor Bora Laskin (now Mr. Justice Laskin). A fourth report did not appear officially during the year, but its main recommendations were widely known and discussed in the University. This was the *Report on the Development of Graduate Programmes in Ontario Universities* under the chairmanship of President Spinks of the University of Saskatchewan and sponsored jointly by the Committee on University Affairs and the Committee of University Presidents. All these reports, it should be noticed, originated within the universities themselves, and underline the capacity for self-analysis and self-renewal within the academic community. It is also a fact worth recording that members of the Faculty of the University of Toronto have played

important roles in the launching and development of the two national and one provincial reports. The Commission on the Financing of Higher Education in Canada was under the chairmanship of Professor Vincent Bladen, at that time Dean of the Faculty of Arts and Science, and one of the commissioners was the Honourable Senator Wallace McCutcheon, a member of our Board of Governors. In the setting up of the Commision on University Government in Canada Professor Bora Laskin played an important role, and I acted as chairman of the advisory committee to the commission. The Vice-President (Research Administration), Professor Gilbert Robinson, was responsible for the compilation of statistical material about graduate work in the province, upon which a good deal of the work of the Spinks report was based.

The importance of these commissions rarely lies in the extent to which specific recommendations are accepted and implemented. Frequently, of course, recommendations are implemented, either in whole or in part, and every commission works on the assumption that its recommendations will be taken seriously and quite possibly implemented. But at the same time there is a recognition that any report achieves its maximum impact through the discussion it arouses, the corrective steps it inspires, and the long-term influence it exerts. The *Report on the Financing of Higher Education in Canada* will continue for many years to be the reference point for all proposals on the financing of higher education in Canada. One can see its influence already in the disposition of the provincial government to adopt a system of formula financing and in its plans for student aid (although in this case one might have hoped that the provincial government had read the Bladen Report more intensively and consulted other sources as well). Although recent agreements between the Dominion and provincial governments have violently changed the context of financing higher education in Canada, the Bladen quantitative estimates will long remain valuable. Important areas of the Bladen Report are as yet untouched. One thinks particularly of the recommendations on the support of research. Certainly specific recommendations, such as the payment of overhead, should be immediately implemented. But there is a good deal to be said now for a separate examination of research in Canada. The very term needs to be defined so as to relate it to post-graduate work in the universities and to activity in industry. The scope of the bodies already in existence, such as the National Research Council, the Defence Research Board, the Canada Council, the Medical Research Council, needs to be precisely determined and the inevitable problem of provincial/federal responsibilities to be examined. One welcomes Mr. Pearson's statement about the determination of the Federal Government to remain firmly in research irrespective of subject matter; one must also recognize that such strong jurisdictions as Ontario will not be content to remain

out of an area that has so many implications for economic growth. One hesitates to suggest another commission, but in view of the examinations that have already been made and the information that is already available the role of such a commission would be largely integrative and analytical.

One incidental effect of the Bladen Report on this University, with important, long-term consequences, was the setting up of a Department of Institutional Research. This grew out of the paper by Professor R. W. Judy and Mr. J. B. Levine on the use of computer models in university planning and administration, which was printed as an appendix to the Bladen Report. Mr. B. L. Hansen was appointed as Director of Institutional Research, and took up his duties on July 1, 1966.

The Duff/Berdahl Report will also have a long-term effect upon Canadian universities. Since, however, many of its recommendations can be implemented by the institutions themselves, one can speak now of immediate effects. In two major areas the Duff/Berdahl Report has already gone a long way toward changing the structure of university government in Canada. First, it summarized with clarity and cogency the arguments for faculty participation in the government of universities at the senior level, so that, within a few years, most universities in Canada will have on their boards representatives from the faculty. At the University of Toronto arrangements have been made to have three members of the President's Council attend meetings of the Board of Governors until such time as the legal and constitutional arrangements can be made for formalizing faculty representation. In the second place, the Duff/Berdahl recommendations for the democratization of departments and the de-professionalization of academic senior administrators have been widely accepted. Here a committee under the chairmanship of Professor Haist brought in recommendations about appointments of departmental chairmen and deans that followed very closely the Duff/Berdahl recommendation and these were subsequently reaffirmed by discussions in the President's Council and Board of Governors. Sir James Duff and Professor Berdahl may already take great satisfaction in their work and its impact upon the Canadian university community. That impact is likely to go far beyond Canada. In a review of the report which appeared in the December issue of *The Universities Quarterly* Sir Eric Ashby, perhaps the most eloquent and authoritative spokesman for higher education today, wrote that "This Report contains a distillation of academic wisdom about how universities ought to be managed."

In one area the Duff/Berdahl Report has encountered sharp criticisms, and that is in the area of student participation in university government. The Report recommends the setting up of consultative committees on the departmental level made up of students and staff and, specifically, the adoption of the device now employed

at Queen's University and the Scottish universities by which the students elect a Rector who is looked upon as their special spokesman. The Report firmly turns down more radical suggestions about student participation in governing bodies on the grounds of "the rapid turnover in student leadership" and "the delicacy and confidentiality of many of the questions that come before the Board", which "would effectively silence the student representative vis-à-vis his constituency." These recommendations are not likely to satisfy student opinion; on this issue the Commission has not so much solved the problem as issued a tentative statement. The problems of student participation have already occupied a great deal of time in the President's Council and are likely to occupy even more time in the future. It is time well spent, for the problems are complex and demand for their resolution the kind of plain-speaking that, in the past, has rarely obtained.

I would go beyond the Duff/Berdahl Report in acknowledging the fact that there are places in formal university government where student participation is valuable. Its value arises simply from the detailed knowledge students have of questions in which they are deeply interested, questions such as student aid and residential policy. Moreover, there are strong reasons why the university as a community should encourage student involvement. The university depends, and will continue to depend, upon informed public opinion, which in its turn will take its direction from graduates of the university. The more these graduates know about the university, and the more they themselves have been involved in its problems, the more likely it is that they will speak with sympathy and conviction. This is the positive fact of student participation that the Duff/Berdahl commissioners did not adequately emphasize. There is a negative fact that the commissioners hinted at and which should be frankly recognized. This fact is that the term "student" covers a variety of types and student solidarity exists only as a hazy abstraction.

The university is faced with a problem of determining where the authentic student voice resides; and once that is determined the further problem arises of how best to deal with the issues that are of particular concern to students. In general, the student emphasis will be on the immediate vexation rather than the long-term issue: he will be more concerned about hours of operation in the library than about the rate of scholarly accessions; more about student aid than relative priorities between scholarship, teaching, and research; more about individual rights than corporate obligations. Rather than seeking membership in existing bodies where their concerns are inadequately dealt with, students might strive for the establishment of bodies made up of representatives of staff, administrations and students and committed to the discussion of problems posed by student members. In this way they could be assured of quick consideration of their pressing issues by a senior body.

In these comments I have assumed that the university is an institution concerned specifically with preserving, disseminating and advancing knowledge and that this is best achieved by the gathering together in one place of scholars working systematically in various fields of knowledge and initiating others into these fields. Scholarship carries its own authority; no experience at the university can be more valuable than observing at close range a powerful and incisive mind in action. The university thus encourages discipleship, but it is a discipleship based upon the recognition of achievement and not on passive submission. A disciple may turn into the liveliest of critics of the master without losing his sense of discipleship. Now this concept of the university with specific tasks, accomplished by a blending of order and personal respect, is now being widely challenged by a group of activists, small in numbers but increasingly influential in national bodies and increasingly assertive in local organizations. Many of the ideas are derived, sometimes in a raw state, from the American organization, Students for a Democratic Society. By study of the literature of that organization and of Canadian groups, one can arrive at an understanding of the basic assumptions. They are rarely stated with explicit directness, but they determine the tone and explain many of the specific recommendations. There are four main assumptions. 1. The university is a political body concerned with general goals of human welfare. It is true that these goals have an intellectual cast but this does not make the university different from other political bodies. 2. Within this political body there must be no hierarchical distinctions. The very concept of administrative power is anathema; even the distinctions between the teacher and the taught must disappear, for it is an affront to human dignity to have one member of the university community sit in judgment on another. 3. Since the university is a political entity it must be governed on a strict democratic basis. There must be participatory democracy with a continuous reference back to the whole community of matters discussed in a governing body. 4. In order to bring about these conditions all tactics are permissible, since the university structure is inherently bad, and since administrators, and even teachers, are hopelessly committed to the old regime. The goal must be, by the selection of issues and the careful massing of opinion, to force a crisis in which the university in its corporate aspect will be humiliated and presented to the public in an unflattering light.

We have here assembled a strange cargo of ideas. Their origins are disparate. Some come from political utopianism — the longing for a paradisal community; some derive from dissatisfaction with the university's traditional bias to the past, and its refusal to commit itself to specific political action; some have an unpleasant aroma of totalitarianism, whether of the right or the left; some seem to be substitutes for religious

conviction. At their worst, the student activists sound like a combination of Paul Goodman, Chairman Mao, and the Oxford Group; at their best they can force a re-examination of postulates and a reformulation of goals.

In another area I think that the Duff/Berdahl recommendations will be outdistanced by events. In the general concept of university government the report adheres to the traditional British pattern, which has roots deep in the nineteenth century, by which there is a two-tiered system of government, one of which is primarily lay in its composition and the other, exclusively academic. Canadian universities have in large measure followed this structure except that they have not admitted academic members to the lay board. The commissioners now suggest that we adopt the British practice of having a substantial academic representation on the board and of making the academic body exclusively academic. The Commissioners briefly discuss the possibility of having a unitary system, which is actually in effect in some of the French Canadian universities. They dismiss the idea, however, on the grounds that the unitary body tends to be too deeply concerned with fiscal to the detriment of academic matters and does not provide a sufficiently broad basis for engaging the attention and participation of the total academic community. I do not think that the Commissioners gave enough attention to possibilities of developing such a one-tiered system so as to do away with some of the defects of the two-tiered system. The two-tiered system, for instance, still retains, even in the British mode, the old distinction between academic and financial, which should no longer be given even a symbolic recognition in our universities. What is more, the two-tiered system requires the setting up of machinery to maintain liaison between the two bodies, and this can result in long delays and in difficult and sustained periods of negotiation.

I would like to see serious consideration given to the possibility of establishing one governing body in the university. It would be a mixed lay and academic body whose representation would have to be devised so as to make it authoritative and acceptable to the academic community. Its success would depend upon a high degree of decentralization, first to faculty and college councils, and second, to committees formed by the central body. Its great virtue would be the concentration of resources required to make decisions in major matters of policy and a consequent diminution in bureaucracy, and the acceleration of the decision-making process.

These suggestions about decentralization run counter to the fashionable emphasis on a strong, central planning authority. Thus the Spinks Commission, after their marvellously lucid and superbly objective account of resources in Ontario for graduate work and research, were constrained to recommend a University of Ontario with a Board of Governors with imposing powers. The presidents, who had previously argued against this

proposal at great length with the commissioners, remained unconvinced. The presidents have consistently recommended a central structure that has toughness and powers of decision, but that recognizes that the real source of co-operation and planning is in the universities and the various professional committees the universities establish. The university community is the last place where one should wish policy to be decided at the centre and then passed down. The farther away individuals are from the decision-makers, the less likely they are to accept the decisions.

There has been much nonsense talked about duplication and competition among the universities. In the undergraduate field of Arts and Science, where the province is struggling to keep up with the demand, there can be no duplication. For many years to come every university must have the basic subjects of a liberal education. Duplication is a possibility in professional education, where the need is more accurately known than it is in the liberal arts. But even that involves dubious assumptions about the structure of society, which events tend to disprove. A case could be made out, for instance, that we need a great many more medical schools in this province. The powerful inhibiting factor is not fear of duplication, but inadequate financial resources. Duplication is a greater possibility in graduate work, where unrestricted activity in esoteric studies can spell mediocrity. We are, however, a long way from such developments. As the Spinks Commissioners point out, we must devote the next years to building up our library resources so that they meet minimum needs. What we should emphasize is not the fear of duplication, but the need for concentration. If there is occasional duplication, if two or three universities build up strong groups, say, in Elizabethan drama, or, in nuclear physics, what matter? The over-all effect will be beneficial, even if strict principles of centralized economy and planning are violated.

In its recommendations, the Laskin report emphasized the need for decentralization in the graduate school. The Dean of the School of Graduate Studies thus summarizes the effect of the report's main constitutional recommendations: "As called for by Council, the new statute combines continuity and change. On the one hand, it reasserts the basic Toronto system (now adopted in most Canadian universities) of a unitary, comprehensive graduate school managing all graduate degree programmes; on the other, it provides for a small elective instead of a large nominated Council, four active instead of two inert Divisions, and, with much more of the executive function decentralized to the Divisions and the rest assumed by the smaller and more engaged Council, the abolition of the Executive Committee. A reorganized secretariat and revised procedure should shift a good part of the burden of admissions and enrolment (the part which is routine in nature) from professorial to secretarial shoulders, leaving professors freer to

cope with problems involving academic judgment."

Even if we were to establish a single-tiered system of university government with extensive decentralization, we would still need a body similar to the "University Court" proposed in the Duff/Berdahl report. Such a body would constitute what the commissioners describe as the university's "window to the world", and would be made up of a very wide representation from within and without the university community. Such a body becomes increasingly important as the university arouses more and more attention from the outside world. The university must still insist upon confidentiality in discussing many matters and must guard against the intrusion of outside pressure groups while decisions are being arrived at. Once the decisions are reached they should, however, be given the widest publicity, and the university should accept its obligation to explain and defend its policies. It has a special obligation to make sure that members of the staff are informed about major decisions before they are discussed publicly. In educational policy, where so much depends on the precise phrase and on the totally articulated argument, there is no substitute for the complete document.

II

Looking back on the multifarious activities of the University during the year, I should like to comment on the developments which seem to me to be particularly important. I would mention first the decisions to move ahead immediately with the building of the Medical Sciences Centre and the Research Library for the Humanities and Social Sciences. By the time this Report appears the Medical Sciences building will be considerably advanced and the final detailed plans for the Library will be complete. The Library plans have been completed some months ago but had been held up pending discussions about the Spinks recommendation on the creation of a provincial library system. In any such system the University of Toronto Library, by reason of its historical primacy, must play a central role both as a repository of books and as a centre for technological advances in cataloguing and bibliography. The Ontario universities are now unanimous that such a provincial system should go forward and accordingly the plans for the Library have been revised so as to provide additional space for outside readers and to make provisions for a provincial bibliographical centre. There is good reason to believe that the new library will be the most advanced library structure as yet erected on this continent.

I am unapologetic about emphasizing the importance of these two new buildings, for though bricks and mortar, as the tired old adage has it, are no substitutes for the human spirit, the human spirit still needs space and facilities. The completion of these two buildings will mark a new era in two areas of traditional distinction at Toronto — medicine and the humanities. For the rapid maturing of the plans

for the Health Sciences building we are immensely indebted to the imagination and driving force of the Chairman of the Board, Mr. Henry Borden, who has made this building his special concern. For the Library building we are indebted to a powerful alliance in which the Librarian, the Dean Emeritus of the Faculty of Applied Science and Engineering, the Dean of the School of Graduate Studies, the Vice-President for Scarborough and Erindale Colleges, and a formidable battalion of scholars, have played important roles. It is a fact not unknown in the University that the building of a proper research library has been my obsessive concern since I returned to this University. We have still to plan and build a building as crucial to the physical and natural sciences as the Medical Sciences building is to medicine and the Research Library is to the humanities and social sciences. That is a composite Science Building to be built to the west of the series of buildings now stretching along St. George Street from Harbord to Russell Streets. A good deal of the building will simply provide space that is urgently needed for basic needs in Botany, Geology and Geography; the remainder will enable Physics, Chemistry, Mathematics and Computer Science to pursue advanced work, often on an interdisciplinary basis.

It may seem curious that, with the construction of three major buildings in science during recent years, I should raise the need for additional facilities on a major scale. The truth is that, for many years to come, we cannot maintain the *status quo* in any division of the University. Even without the increases in enrolment that we have expected, we are constantly faced by intellectual developments that demand new physical facilities. The Dean of the Faculty of Law has referred again, with some liveliness, to the inadequacies of the present facilities for Law; many of his colleagues could, and, from time to time, do, join the admonitory chorus; all the University can do, with limited funds and limited human resources, is to scrutinize its priorities constantly.

Another building of the year deserves a special accolade: Scarborough College, which was completed and occupied midway through the term. The building inspired a succession of laudatory articles in architectural magazines, many of them with an international circulation. This is a building to which it is impossible to be neutral, since it is a statement of a radically new concept of the university community. I predict that it will take its place along with the Toronto City Hall and the Simon Fraser campus as a major contribution to Canadian architecture. It is appropriate that the University should foster radical experimentation. Traditionally the University delighted to pay its respects to the past and to proclaim through its choice of architectural styles its devotion to the mighty dead. But it has an obligation no less pressing to reach out to the future and to lead the way.

I have from time to time commented in this report on our general international obligations and our

specific international contributions. These have taken the form of sending staff members to developing countries to assist in the establishment of professional schools or in the teaching of subjects for which there was a scarcity of experts. At home, we have concentrated on building up our resources in areas traditionally ignored by Canadian universities, but often now of immediate concern: areas such as Japan, China, India, the Islamic World, Russia and Eastern Europe. The emphasis has been on the building up of classical studies in language and literature, and this emphasis will continue. Along with it should go a concern for contemporary cultures and society, and it was this concern that lay behind the establishment of a *Programme in International Studies* during the year, under the chairmanship of Professor Cranford Pratt. The programme will foster modes of co-operation among departments with an international interest. One interdisciplinary centre with a fine record of achievement predates the establishment of the programme: The Centre for Russian and East European Studies; and it will provide a model for others to follow. A Centre for the Study of International Relations has a high claim for the attention of the Programme. The University has now taken steps to organize its international resources; it has made available from slim endowment resources initiating grants. It awaits now the support that should come from the Federal Government, but, at the same time, in the light of past history, it turns its eyes towards the south from where, so often, its salvation has come.

I record with great pleasure the appearance of the first volume of the *Dictionary of Canadian Biography*. The event was significant in a number of ways. It revealed again the efficiency and imagination of the University Press; the volume — a repository of seventeenth century figures — drew attention to the importance of our French inheritance, and gave a special significance to the joint publication by the Laval and Toronto Presses; finally, it is the beginning of the major publishing venture in Canadian publishing history and it thereby highlights once again the centrality of the university in the cultural life of this country.

III

The major ceremonial event of the year was the installation in October of Dr. O. M. Solandt as the Chancellor of the University of Toronto. Dr. Solandt's election to the high office is in a sense a continuation of the academic tradition first established by Dr. Samuel Beatty and continued by Dr. Archile Jeanneret. It is true that Dr. Solandt has not been associated with universities directly in recent years, but his work with the government and with business has kept him close to the university world, and, in particular, to the complex world of scientific research. His subsequent appointment as chairman of the new Science Council makes even more significant his alliance with the university world. The retirement of Dr. Jean-

neret after so many continuous years of service drew attention to the extraordinary nature of his contribution to the University. It can best be summed up, I think, by saying that he was the embodiment of the liberal and humane tradition that is at the very core of the University of Toronto. (Since these words were written, we have received the sad news of Dr. Jeanneret's death.)

The end of the year saw the retirement of four major academic administrators and officials. In each case, however, I can report he will continue his service to the University in some other capacity. Dr. Bladen retired as Dean of Arts and Science, and now reverts with undisguised enthusiasm to his professorship in Political Economy. Under his leadership the Faculty of Arts and Science moved ahead almost to its full development without at the same time losing any of its academic distinction. Indeed under his leadership it has become a far more highly integrated and powerful academic community. I commend a careful reading of his valedictory report. Dr. R. R. McLaughlin retired as Dean of the Faculty of Applied Science and Engineering but moved immediately into a new post as Chairman of the Planning Division. During his deanship the Faculty was a happy and harmonious community which grew each year in scholarly strength and distinction, particularly in the areas of research and graduate studies. He will now bring to his Planning Division his unparallelled knowledge of the University, his fine capacity for resolving conflicts, and his sure apprehension of university needs. Dr. John Hamilton resigned as Dean of the Faculty of Medicine to become Vice-President for Health Sciences. Under him the Faculty began its voyage into the new world of Medicare and massive research. Among his many contributions to the welfare of the Faculty I recall with particular satisfaction his skill in integrating the teaching hospitals and the Faculty. In his new position he will be in charge of the integration of all divisions of the University concerned with the health sciences and he will in addition take on the general administrative duties for which his liberal interests and his skill in negotiation prepare him admirably. Dr. William Swinton left his post as Director of the Royal Ontario Museum to become a Centennial Professor in the University. He took over the direction of the Museum at a difficult time, and he infused into it a liberating vitality. His scholarship and his skill in exposition will now be at the service of the University, particularly in the developing area of the history and philosophy of science.

July 1, 1966, was a major turning point in the history of the University with a change in leadership in four main divisions. Professor A. D. Allen became Dean of the Faculty of Arts and Science. Since 1964 he had been a highly successful Associate Dean of the Faculty, and his appointment to the senior office was acclaimed by his colleagues. In the tradition of the office, he brings a concern for the

development of the faculty as a whole, and an ability to work easily and effectively with his colleagues. Professor James Ham became Dean of Applied Science and Engineering. His scholarly interests and achievements will ensure the continuation of our emphasis on research and graduate work in that Faculty. Professor A. L. Chute became Dean of Medicine. As Professor of Paediatrics, he was already a senior member of the Faculty; we are fortunate to be able to inherit his energy, his scholarship, and his unselfish concern for the advancement of Medicine on behalf of the whole faculty. Mr. Peter Swann became Director of the Royal Ontario Museum. He comes from Oxford, where he was Keeper of the Department of Eastern Art at the Ashmolean Museum. His energy, his imaginativeness, and his wide-ranging scholarship will find scope and test at the ROM.

At the end of the year Professor B. Wilkinson retired as Director of the Graduate Centre for Medieval Studies, but fortunately returns as Director of Studies. It was fitting that a scholar of such wide international distinction should be the first head of the Centre, which can draw upon resources in many places at the University. He has given the Centre a strong direction. Professor Wilkinson's successor is Professor J. F. Leyerle of the Department of English at University College, whose fine scholarship is joined to a persuasive enthusiasm for his subject.

Arrangements were made during the year for Professor Northrop Frye to become a University Professor. He will retain his professorial appointment at Victoria College, but he will leave the office of the Principal on January 1, 1967. It is well known that the services of Northrop Frye were zealously sought by many major universities, and we are happy (and relieved) that he has decided to stay with us. The University is pleased to join with Victoria College in the arrangements for Professor Frye's appointment. This is another illustration of the strength that comes from the federated structure.

A major appointment was that of Arnold Wilkinson as Warden of Hart House. He had already demonstrated his fine qualities in various capacities, and during the year he assumed full responsibility for the House. His formal appointment was warmly received in the entire academic community. He will have the difficult task of determining the role of Hart House in the new era of student centres, political activism, and refurbished feminism.

IV

There are now (exclusive of the federated colleges) over 1,200 full-time members of the teaching staff, and we should have at the time of our full expansion in the early 1970's a full-time staff of over 2,000. This will demand a rate of accession that we have never had before, but experience indicates that, provided resources are available early enough in the academic year, we can secure the staff we need. In 1965–66 we had a net increase in staff of over 100; in the year 1966–67 it is 158. To achieve our goal we must

advance this number well beyond 200.

These calculations are based on an over-all staff-student ratio of approximately 1 to 14. It has been suggested that in some jurisdictions a higher ratio obtains without loss of academic quality. This is an area, however, where generalization is difficult and statistics are notoriously misleading. One must secure the staff that a given educational system demands. In graduate work, for instance, there is no substitute for private meetings with the thesis director; and in the clinical work in Medicine and Dentistry a higher ratio than 1 to 3 or 4 may have serious consequences for the professional competence of graduates. A college system, too, demands more staff than a unitary system. The University of Toronto, with the largest graduate school in Canada, with also the largest Faculties of Medicine and Dentistry, and with a profound historical commitment to the college system, must clearly maintain a favourable staff–student ratio.

The key to attracting staff is a reputation for scholarship. This University enjoys such a reputation, even more widely outside than inside the country. The constricting domesticity of Canadian comment frowns upon claims of excellence. Marshall McLuhan was an eccentric with a few amusing and provocative ideas until the journals in New York and London began to put him in the company of the great social critics. There will be, I predict, widespread emphasis on the weakness that the Spinks Commissioners found in our provincial graduate schools, and no reference to the tributes to the strength; particularly since Toronto commands so much of that strength. At the risk of violating the Canadian relish for self-denigration (permissible, perhaps, in this centennial year), I quote the passages from the Spinks report where Toronto's scholarship is assessed:

"In the physical sciences, the Ontario universities are already strong. Toronto and McMaster, Queen's and Western, all have their areas of strength, and there are impressive examples of 'big science' on their campuses. . . . Toronto is Canada's principal centre for [humanistic] studies, and it displays an impressive breadth and depth. Its libraries, its numerous specialized institutes, the cultural cross-currents to which a federated university with several sectarian colleges must be exposed, have all contributed to this strength. Several of its humanities' departments are of world stature and in effect belong to the entire world of scholarship. The Toronto humanists embody a central core of traditional studies with many initiatives. . . . Toronto and Queen's have for many years dominated [the social sciences] in Canada. The leadership of such men as Innis and Mackintosh, Creighton and Lower, has been of prime value to Canada as a national state, as well as to Ontario."

There is no cause here for complacency and self-satisfaction. Because we build on strength, we must always be aware of our duty to maintain it.

CLAUDE BISSELL

DR. VINCENT BLADEN

(*Continued from page 24*)

course. But I argue it as an educational adventure not as specialized preparation for professional work in the specialism. I argue the "general education" value of our honour courses and I suggest that the danger is professionalization not specialization. I am not at all sure that the honour courses are not too professional even for the long-run development of the professionals. I am particularly worried lest in the insistence on rigorous training in technique imagination should be killed. Alfred Marshall said of the economist that he "needs the three great intellectual faculties, perception, imagination, and reason; and most of all he needs imagination." We know how to train in analysis and we know how to examine to test our success in such training. We know so little about how to develop imagination and too often fail to recognize how much of it we destroy. This is a matter for serious consideration in the Graduate School as well as in the undergraduate courses.

I have said that I welcome the appointment of the Committee on Undergraduate Instruction in this Faculty. Of course there are things that can be improved, and of course it is well to give students a chance to tell us what they think is wrong. The Committee will have to preach to the staff. I hope that it will present something like the challenge that Professor Laski offered in his letters to Mr. Justice Holmes: "When I think what we could do for the undergraduate in making him feel the glory of the intellectual life and the miserable pittance we dole out to him in the form of courses, where knowledge is taken to be something that has happened, it makes me want to weep. . . . If I had to make up a creed for the professor . . . its first article would be 'Trust Undergraduates'. They may be stupid, lazy, what you will: but 99 out of every 100 have a divine spark in them somewhere which sympathy and enthusiasm is sure to light." But I hope the Committee will preach to the students too: for they must recognize that there is too little intellectual dialogue between students. The difference between my Oxford of 45 years ago and their Toronto of today is not that I had more dialogue with my teachers, but that I had very much more with my fellow students (not with many but intensively with say half a dozen). To Laski's creed I would add Adam Smith's tribute: "Such is the generosity of the greater part of young men, that, so far from being disposed to neglect or despise the instructions of their master, provided he shows some serious intention of being of use to them, they are generally inclined to pardon a great deal of incorrectness in the performance of his duty, and sometimes even to conceal from the public a good deal of gross negligence."

I joined the staff at the age of 21 and I learnt my economics as I taught it and as I worked with my colleagues in the department. I sometimes feel that we have become anxious that our recruits to the staff

shall know everything before they are appointed. I am still learning, particularly from my young colleagues who introduce me to new ideas. We delay too long the entry of young scholars into our community and fail to give exciting teaching opportunities early enough. The new degree, Master of Philosophy, provides a basis on which earlier recruitment is possible; but it will not be quite satisfactory until a new doctorate, based purely on publication, similar to the D.Sc. of London, is available for the young man who did graduate work for his master's degree and developed as a mature and independent scholar while holding a teaching appointment. I have said that I learn from my junior colleagues, but I should also say something about what I learnt from senior ones. My debt to Professor C. R. Fay in particular is very great: he took seriously the duty of a senior colleague to stimulate, encourage, and sometimes goad, his junior colleagues. I wish that more senior professors recognized the importance of their role in the education of their young colleagues. . . .

. . . I confess that I have enjoyed my term of office: but I expect to enjoy my return to teaching even more. That part of my teaching will be at Scarborough College makes the prospect the more exciting.

VINCENT W. BLADEN

Dr. R. R. McLaughlin leaves his post as the Dean of Applied Science and Engineering with a strong appeal for funds that will enable his Faculty to build on achievements financed by $2,325,000 from a foundation

Ford grant's momentum "can't be allowed to die"

In making my third annual report to the Ford Foundation respecting their grant of $2,325,000 to the faculty I said, "The strengthening of the graduate activity in this faculty, expected and hoped for as a result of the grant has become increasingly evident during the year. Much of the early work stimulated by the grant has already been brought to fruition. It is the obligation of good graduate work to produce people and publications. There are some eleven fellows who have become qualified and engaged in university teaching as a result of pursuing research assisted by the grant. In addition to the many theses and internal publications, there have been 28 papers presented or submitted to learned journals, and of these, 13 have already appeared in print", and I quoted a remark of Professor G. R. Lord, "In sum, the spirit and vigour of our research and graduate activity, as well as the numbers of students and research projects, have risen in the period of the grant's effectiveness. Many things have been done which would not have been done so early, or at all, without this assistance. Indeed, the effect of the grant may be more readily, but less happily, assessed with its termination". This, of course, brings into relief the problem of what steps must be taken to maintain the momentum engendered by the Ford grant, for it must not simply be allowed to die. Indeed the broad question of adequate support for engineering research both from within the university and from outside sources needs very serious study. An indication of this is the brief submitted by the National Committee of Deans of Engineering and Applied Science, an affiliate of the Association of Universities and Colleges of Canada, to the National Research Council on this subject. Another indication of this need for reassessment is the

continued refusal to include graduate students in engineering in the Province of Ontario Graduate Fellowships programme. This is in curious contrast to one of the avowed purposes of the Ford Grant to increase the number of university teachers in Engineering. A strong representation by this faculty against the continued exclusion of engineering graduates from the programme referred to was made before the Committee to Study the Development of Graduate Programmes in Ontario Universities, under the Chairmanship of Dr. J. W. T. Spinks.

This June (1966) the contract with the External Aid Office to maintain three Professors of engineering per year for three years at the Karnataka Regional Engineering College, Mangalore, India, comes to an end. Professors A. Straughen and J. D. Barber from this faculty and Professor Grant Huber from McMaster University will return this June. There is little doubt that this has been a worthwhile venture, and discussions concerning some form of continuance are going on.

Several years ago a decanal committee was appointed to discuss the future development of the faculty, and as might be expected some of their recommendations have already been implemented. Another of their recommendations came to fruition in the establishment this year of the Master of Engineering degree. This degree is designed to help meet the growing need for significant university-industry liaison in this era of rapid technological change, and the need to help to keep graduates of a few years' standing in tune with such changes. Unlike the M.A. Sc. degree, which is essentially based upon research and not intended to perform the function just referred to, the Master of Engineering degree will be based in large measure upon design. Although announced only this spring, already six students have enrolled and a number more have indicated a serious interest. It should be noted that industry, too, has a responsibility in this field. There is not yet a general and ready response from industry to make necessary and satisfactory arrangements for their employees to have leave of absence for this and even far less extensive programmes at universities. . . .

Still another of the decanal committee's recommendations is about to be initiated by the establishment jointly with the department of history of a programme in the history of science and technology. Professor John Abrams of the department of industrial engineering will be heavily involved in this development.

Further and active developments in the field of materials science are taking place. This was forecast last year by the change in name of the department of metallurgical engineering to metallurgy and materials science. A new wing on the Wallberg Building was begun for that department. Looking to the future, activities in this field are of active interest to all departments in the faculty. The first two floors of the new building referred to, half paid for from Ford funds, are

now complete and occupied and constitute a critically welcome addition to our facilities. Preliminary discussions among interested parties give promise of rapid development and support in this field on an intra-faculty basis, and give rise to the expectation that before long the two additional floors for which the building was designed, will be required.

The growth rate of the relatively new department of industrial engineering has been maintained. Professor Arthur Porter reports that the increase in numbers of students per annum averaged over the past three years has been approximately 30 per cent at undergraduate level and approximately 40 per cent at graduate level. The new lecture and research programmes in human factors engineering, the first of their kind in a Canadian university, have created widespread interest. From the academic viewpoint the importance of these developments is in the increasing awareness of the interaction between man and machines which it has stimulated. . . .

With all the sincerity at my command I wish to thank those many people within the faculty and within the university who have helped me in so many ways to carry on the duties of dean. It is to be expected that in such an office one will encounter many almost routine problems and many difficult problems. To me the important factor is the climate in which solutions to such problems are sought; and here I can testify that my experience has shown the climate to be exemplary. The good of the university and the students it serves has been the guiding principle in reaching decisions. On those rare occasions when the temperature rises a little the rise is never more than a very few degrees and it quickly returns to normal. All in all, I can not think of a better place in which to play some part in a truly worthwhile endeavour. . . .

R. R. McLaughlin

UNIVERSITY OF TORONTO

This annual report is patterned to provide information which may be of interest to alumni and other friends of the University, many of whom are contributors to the Varsity Fund or supporters of other University programmes and activities.

Regular issues of *Varsity Graduate* and *Varsity News* have included pictures and stories of current developments and further photographic evidence of the changing scene is included in the present issue.

Full-time student enrolment in the regular winter session totalled 17,705 and there were also 5,259 part-time students. An alumnus returning to the Campus for the first time in ten years would notice the larger numbers of people everywhere: in the intervals between classes the capacity of sidewalks and paths is overtaxed and the crossings along St. George Street are reported to have heavier pedestrian loading than the Queen and Yonge corner in the lunch hour. The buildings are crowded, lunch facilities are over-loaded, and parking is inadequate.

The newer buildings are taller than those of earlier years and the Burton Tower of the new McLennan Laboratories at Russell and Huron Streets rises to 16 storeys, topped by two of Astronomy's distinctive telescope domes. On the inside of new buildings modern materials, lighting, and equipment are conspicuous: in contrast our older buildings appear antiquated and inefficient and renovation expenditures are heavy.

On the Campus, clothing and various forms of facial adornment are also noticeably different from their counterparts of a decade ago, and a campus motorist must be prepared for the sudden appearance of a trusting or daring pedestrian directly in his path.

Although costs generally have risen in most personal areas of expenditure, tuition fees, residence fees, most of the incidental fees and most meal prices have remained at the same level as in the previous year.

For faculty and staff members, salaries reached a more satisfactory level in relation to community averages and while the University of Toronto did not head the list in each of the professorial ranks, it did compare reasonably well with other Canadian Universities, even if not with some of the more distinguished of the Universities in the United States. It might be expected that the heavy graduate obligations at Toronto would necessarily be accompanied by the highest academic salary rates in Canada, but it appears that when the

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various other professional and personal advantages of a large metropolitan centre are taken into account, many newer institutions and those in smaller cities must pay even higher rates than Toronto to attract first-class faculties.

In January, 1966, when the Canada Pension Plan came into effect, the University Pension Plan was revised to integrate with the Canada Pension Plan and to relate pensions to salaries received during the five-year period of highest earnings instead of the total of "career" earnings, which, for many persons now retiring, would include the woefully low salaries of the 1930's and 1940's. Provision for a widow's pension was added instead of the former "joint survivor" option which entailed a considerable reduction in pension rate. The new plan also provided improved benefits for former faculty and staff members already receiving retirement pensions. A disability insurance plan was also developed to protect the earnings of staff members during a period of total disability, and this went into effect directly after the close of the year — viz. on July 1st, 1966.

In the year 1965–66 the School of Library Science was transferred from the Ontario College of Education and became one of the regular academic units of the University of Toronto. Its new temporary home is in a former warehouse building on McCaul Street, but it will move, eventually, to the large new Humanities and Social Sciences Research Library now in process of design. Other new developments during the year included the establishment, in response to student requests, of an Advisory Bureau and the creation of an International Student Centre to carry on the work done so effectively by Friendly Relations With Overseas Students (F.R.O.S.) for many years. Work on the restoration of Baldwin House to serve as the home of the International Student Centre was undertaken during the year, thanks principally to the generosity of Rotary Clubs in this district, and since the year end the building has been the scene of a gala opening and of an active service programme.

For those readers whose interest includes the financial statements themselves, it is pointed out that the book value of University buildings and equipment was increased by $97,040,328 in an arbitrary revaluation to "replacement value", as used for insurance purposes.

Further capital funds were raised by the issue of debentures to The Ontario Universities Capital Aid Corporation, in accordance with present Provincial

(*Continued on page 64*)

BALANCE SHEET

(with comparative figures

ASSETS

I Current Operating Funds

		June 30 1966	June 30 1965
Cash		$ 605,313	$ 930,982
Due from trust and endowment funds (per contras):			
—trust funds	848,319		
—general endowment funds	14,919		
		863,238	482,094
Due from capital funds (per contra)		601,582	360,182
Short term investments—note 2 (market value $1,703,479 in 1966 and $1,402,654 in 1965)		1,703,479	1,400,924
		3,773,612	3,174,182
Accounts receivable:			
Fees and residence dues		7,534	3,579
Due from related organizations		9,823	8,095
Other accounts receivable and recoverable expenditures		823,460	661,362
		840,817	673,036
Stores and supplies—approximately at cost		266,713	247,717
Prepaid and deferred expenses		260,005	292,556
		$ 5,141,147	$ 4,387,491

II Capital Funds

Cash		$ 346,475	$ 9,192
Special funds on deposit for capital purposes		40,000	200,328
Sales taxes recoverable on construction expenditures		103,509	606,499
Investments held for building programme purposes—note 2 (market value $9,213,384 in 1966 and $6,381,769 in 1965)		9,231,425	6,315,782
Land, buildings and equipment:			
St. George Campus—(note 3)		201,819,617	196,112,025
Scarborough College—at cost		2,090,737	740,227
Erindale College site—at cost		1,141,046	872,633
Construction in progress—at cost		26,073,492	14,758,644
Properties leased to others—at cost		585,359	585,359
		231,710,251	213,068,888
Discount on debentures—less amount written off		395,080	522,769
Cash and investments held for sinking funds:			
Cash		34,040	4,117
Investments—note 2 (market value $15,029,568 in 1966 and $13,495,313 in 1965)		15,556,411	13,818,389
		15,590,451	13,822,506
		$257,417,191	$234,545,964

JUNE 30, 1966

at June 30, 1965)

LIABILITIES

I Current Operating Funds

	June 30 1966	1965
Accounts payable and accrued charges	$ 2,626,585	$ 2,256,825
Due to related organizations	1,605,742	1,157,075
	4,232,327	3,413,900
Unearned income and fees paid in advance	862,349	1,000,981
Appropriation for major maintenance and renovations	462,000	352,940
Operating departments' reserves	167,010	98,406
Unexpended appropriations	115,439	191,508
Unexpended specific government grants	6,672	88,606
Net (deficit) or income carried forward (statement 2)	(704,650)	(758,850)
	908,820	973,591
	$ 5,141,147	$ 4,387,491

II Capital Funds

Due to current operating funds (per contra)	$ 601,582	$ 360,182
Construction accounts payable and holdbacks	2,960,666	3,777,335
Mortgages payable	30,040	17,260
3½% debentures due April 15, 1969	11,500,000	11,500,000
3% debentures due August 15, 1970	7,500,000	7,500,000
5½% debentures issued to The Ontario Universities Capital Aid Corporation—(note 4)	30,598,141	11,000,000
Total liabilities on capital account	53,190,429	34,154,777
Capital trust funds to be expended on building programme —statement 6:		
For general programme	6,193,982	6,132,079
For specific programmes	3,593,002	3,356,906
General endowment in capital assets—statement 6 (note 3)	194,439,778	190,902,202
	$257,417,191	$234,545,964

(Statement 1 continued on next two pages)

BALANCE SHEET

(with comparative figures

ASSETS

III Trust and Endowment Funds

	June 30	
	1966	1965
Trust fund assets:		
Cash	$ 585,538	$ 557,732
Student loans receivable	249,872	265,086
Investments—note 2—		
Pooled investments held for endowed funds (market value $8,942,436 in 1966 and $8,797,518 in 1965)	9,741,534	9,258,866
Investments held for specific endowed funds	17,024,578	17,080,650
Pooled investments held for expendable funds less reserve of $120,000 in 1966 and $90,000 in 1965 (market value $7,873,441 in 1966 and $8,675,231 in 1965)	8,084,215	8,843,054
Investments held for specific expendable funds	2,857,277	2,997,980
	38,543,014	39,003,368
General endowment assets:		
Cash		16,720
Investments held for general endowment—note 2 (market value $1,289,232 in 1966 and $1,700,143 in 1965)	1,377,491	1,742,551
Loans to subsidiary organizations	924,484	524,000
	2,301,975	2,283,271
Assets held in safekeeping for related organizations and others:		
Cash	13,298	13,333
Investments	2,995,741	7,305,234
	3,009,039	7,318,567
	$ 43,854,028	$48,605,206

JUNE 30, 1966

at June 30, 1965)

LIABILITIES

III Trust and Endowment Funds

	June 30	
	1966	1965
Trust fund liabilities:		
Endowed faculty and departmental funds for specific operating purposes (including funds acting as endowments)—statement 4	$ 8,012,275	$ 8,012,275
Endowed funds for student awards, lectureships, research, etc.—statement 4	17,796,012	17,462,316
	25,808,287	25,474,591
Expendable funds, including income on endowed funds, available for student awards, lectureships, research, pension funds, etc.—statement 4	11,886,408	13,046,683
	37,694,695	38,521,274
Due to current operating funds (per contra)	848,319	482,094
	38,543,014	39,003,368
General endowment liabilities:		
Due to current operating funds (per contra)	14,919	
General endowment—statement 4	2,287,056	2,283,271
	2,301,975	2,283,271
Liability for assets held in safekeeping	3,009,039	7,318,567
	$43,854,028	$48,605,206

AUDITORS' REPORT

To the Governors of the

UNIVERSITY OF TORONTO:

We have examined the balance sheet of the University of Toronto as at June 30, 1966 and the statement of current operating income and expense and net deficit or income carried forward, statement of capital trust funds to be expended on building programme, statement of general endowment in capital assets and summary of trust and endowment funds for the year ended on that date. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion the accompanying balance sheet, statement of current operating income and expense and net deficit or income carried forward, statement of capital trust funds to be expended on building programme, statement of general endowment in capital assets and summary of trust and endowment funds, read in conjunction with the notes thereto, present fairly the financial position of the University as at June 30, 1966 and the results of its operations for the year ended on that date, in accordance, in all material respects, with generally accepted accounting principles appropriate for universities, applied on a basis consistent with that of the preceding year except as described in note 3 to the financial statements.

CLARKSON, GORDON & CO.
Chartered Accountants.

Toronto, Canada,
October 25, 1966.

NOTES

UNIVERSITY OF TORONTO: Notes to Financial Statements, year ended June 30, 1966:

1 The financial statements do not include the income or expense of the following related organizations, nor their assets and liabilities (except to the extent that the land and buildings used by certain of these organizations are included in the capital funds section of the balance sheet and securities owned by them are held for safekeeping), as the net assets and results of operations of these organizations are held to further the continuing activities of their respective operating areas:

- Connaught Medical Research Laboratories
- Hart House
- Ontario College of Education
- Royal Conservatory of Music of Toronto
- Scientific Development Committee (including the Insulin Committee)
- Students' Administrative Council
- University of Toronto Athletic Association
- University of Toronto Parking Authority
- University of Toronto Press
- University of Toronto Women's Athletic Association

The total assets of the above organiza-

tions not reflected in the current operating or capital funds on the accompanying balance sheet amounted to $22,900,000 at June 30, 1966.

2 Investments owned by the University are shown on the balance sheet at amortized cost plus accrued interest, with the following exception.

When investments held for endowed and pooled expendable trust funds are sold to permit re-investment in other approved securities, any profit or loss on sale is amortized according to the maturity dates of the securities sold. The unamortized balance is included with the book value of investments. Certain investments held for specific funds are shown at cost or values assigned at acquisition less amortization.

Investments held for sinking funds include $3,587,000 par value of University of Toronto debentures (1965: $3,670,000).

3 The book values of buildings and equipment at St. George Campus were revised at June 30, 1966 on the basis of estimated replacement cost, as determined for insurance purposes as at June 30, 1964, with subsequent additions at cost. The comparable figures at June 30, 1965 have been revised to reflect the adjustment of $97,040,329 which has been shown as an increase in the general endowment in capital assets. Land continues to be valued substantially at cost.

4 The accumulative amount of 30 year debentures issued to The Ontario Universities Capital Aid Corporation to finance capital expenditures is as follows:

	As at June 30,	
	1966	1965
St. George Campus	$16,000,000	$ 6,000,000
Scarborough College	14,750,000	5,000,000
	30,750,000	11,000,000
Less repayments	151,859	
	$30,598,141	$11,000,000

These debentures are payable in equal annual instalments of principal and interest and mature in 1994, 1995 and 1996.

It is expected that the Ontario Department of University Affairs will continue to make grants equal to the annual payments of debenture principal and interest as they become due. Accordingly, interest expense will be recorded in the accounts on a cash basis to correspond with the interest portion of grants received. Interest accrued on these debentures but not recorded in the accounts at June 30, 1966 amounted to $932,786 (1965: $238,986).

5 In accordance with the University's normal practice, the statement of current operating income and expense does not include a charge for depreciation of capital assets, but it does include charges of $2,310,000 (1965: $1,734,300) for additional or replacement equipment. The cost of acquisition of new properties and of construction and initial equipping of new or rehabilitated buildings (which amounted to $18,641,363 in 1966 and $19,679,748 in 1965) has been added to fixed asset accounts under capital fund assets.

6 The estimated cost to complete land acquisitions in process and to complete buildings under construction, including Scarborough and Erindale Colleges, at June 30, 1966 or started prior to September 28, 1966, including commitments for equipment, is $12,940,000 (1965: $16,650,000).

7 At January 1, 1966, the University's pension plan for academic and administrative staff was revised. The resulting unfunded liability for past service is estimated at $6,444,000 at June 30, 1966 and is to be funded and included in operating expense over fifteen years.

8 Comparative figures for the 1965 year have been adapted in certain instances to conform with the classification of accounts used in 1966.

Statement 2 **University**

STATEMENT OF CURRENT OPERATING INCOME

YEAR ENDED

(with comparative totals for

INCOME (000s omitted)

	Year ended June 30, 1966					Year ended June 30, 1965	
	St. George Campus $	Scarborough College $	Erindale College $	Total $	%	$	%
Student fees	7,613	138		7,751	16.1	7,005	18.7
Endowment income from:							
—general endowment	100			100	1.0	94	1.2
—endowed trust funds for specific purposes	381			381		374	
Government grants for specific operating purposes	138			138	0.4	117	0.6
Gifts for specific operating purposes	74			74		88	
Interests and rentals	588	1	2	591	1.2	377	1.0
Miscellaneous	109			109	0.2	170	0.5
Residences and other ancillary departments	1,283	13		1,296	2.7	968	2.6
Revenues from services to outside organizations	1,186			1,186	2.5	948	2.5
	11,472	152	2	11,626	24.1	10,141	27.1
Government grants for general operating purposes—							
Federal University grants	3,540	47		3,587	7.5	3,718	9.9
Province of Ontario grants for—							
Ordinary purposes	21,200	900	200	22,300	46.4	15,266	40.7
Graduate programme	1,500			1,500	3.1	1,500	4.0
Student assistance	236	8		244	0.5	188	0.5
Libraries		139	138	277	0.6	176	0.5
Interest on capital debentures	330	275		605	1.3		
	38,278	1,521	340	40,139	83.5	30,989	82.7
Grants and gifts for assisted research	7,936			7,936	16.5	6,502	17.3
	46,214	1,521	340	48,075	100.0	37,491	100.0

AND EXPENSE AND INCOME CARRIED FORWARD

JUNE 30, 1966

the year ended June 30, 1965)

EXPENSES (000s omitted)

	Year ended June 30, 1966					Year ended June 30, 1965	
	St. George Campus $	Scarborough College $	Erindale College $	Total $	%	$	%
Academic—Statement 3	26,612	887	267	27,766	57.8	22,353	58.3
General administration	1,429	34	14	1,477	3.1	1,146	3.0
Operation and maintenance of physical plant	3,959	335	13	4,307	9.0	3,532	9.2
Information, publications, Alumni affairs, etc.	456			456	0.9	363	1.0
Student assistance	236	9		245	0.5	188	0.5
Miscellaneous	454			454	0.9	362	1.0
Residences and other ancillary departments (including building costs)	1,369	14		1,383	2.9	1,007	2.6
Total University operating expense	34,515	1,279	294	36,088	75.1	28,951	75.6
Interest on capital debentures	330	275		605			
Interest on 1969 debentures	402			402	2.6	402	1.7
Interest on 1970 debentures	236			236		236	
Provision for funding of supplementary pensions	518			518	1.1	518	1.3
Provision for major maintenance and renovations	600			600	1.2	300	0.8
Appropriation to capital funds for improvements in computer facilities financed from related specific revenues	315			315	0.7	188	0.5
Royal Ontario Museum (including building expense less direct income)	1,321			1,321	2.8	1,220	3.1
	38,237	1,554	294	40,085	83.5	31,815	83.0
Assisted research	7,936			7,936	16.5	6,502	17.0
	46,173	1,554	294	48,021	100.0	38,317	100.0
Net income (expense) for the year	41	(33)	46	54		(826)	
Net income (expense) carried forward from prior year	(782)	23		(759)		67	
Net (deficit) or income carried forward	(741)	(10)	46	(705)		(759)	

ACADEMIC

YEAR ENDED

(with comparative total figures for

	Salaries and wages	Pension costs	Equipment and apparatus
St. George Campus			
University College	$ 1,207,481	$ 62,982	$ 9,020
New College	126,479	4,979	1,323
Innis College	49,086	2,150	681
Faculty of Arts and Science	7,097,563	366,425	392,715
Faculty of Applied Science and Engineering	2,274,115	122,286	104,054
School of Architecture	344,459	18,847	2,872
School of Business	218,638	12,025	1,795
Institute of Child Study	210,266	12,826	4,118
Faculty of Dentistry	1,085,933	53,813	24,789
Faculty of Food Sciences	200,541	11,394	7,511
Faculty of Forestry	167,490	10,365	6,821
School of Graduate Studies	166,401	8,381	3,194
School of Hygiene	526,760	34,083	17,345
Faculty of Law	269,471	14,981	31,742
School of Library Science	209,920	13,197	154,885
Faculty of Medicine	2,541,271	130,079	88,565
Faculty of Music	350,519	15,439	15,606
School of Nursing	243,294	13,566	539
Faculty of Pharmacy	234,226	13,510	22,041
School of Physical and Health Education	87,765	945	226
School of Social Work	302,312	21,419	2,495
Division of University Extension	748,585	11,601	2,095
Department of Athletics and Physical Education—Men	68,984	7,193	1,396
Department of Athletics and Physical Education—Women	86,142	2,532	1,091
Library	1,641,144	60,542	977,346
Banting and Best Department of Medical Research	223,943	17,310	7,948
Institute of Computer Science	164,410	5,238	2,613
Other Institutes and Centres	143,637	8,732	1,061
University Research			
Moving expenses—new academic staff			
Travelling expenses—academic staff			
Examination supplies			
	$20,990,835	$1,056,840	$1,885,887
Scarborough College	613,764	26,807	142,731
Erindale College	115,350	6,749	138,044
Total academic expenses	$21,719,949	$1,090,396	$2,166,662

EXPENSE

JUNE 30, 1966

the year ended June 30, 1965)

Materials and supplies	Miscellaneous and general	Total expenses	Comparative 1965 total expenses	Assisted research expenditures	
				Year ended June 30, 1966	Year ended June 30, 1965
$ 6,809	$ 12,569	$ 1,298,861	$ 1,091,488		
1,925	2,966	137,672	85,865		
1,691	2,691	56,299	47,655		
411,309	42,713	8,310,725	6,928,221	$2,566,402	$1,872,693
151,717	26,729	2,678,901	2,338,590	1,138,814	1,009,152
13,733	1,836	381,747	337,755	22,497	9,821
5,422	20,970	258,850	217,786	16,924	2,023
7,028	3,771	238,009	228,272	88,418	73,098
103,853	77,692	1,346,080	1,220,654	205,707	140,812
10,891		230,337	208,873	20,490	7,595
9,138	10,185	203,999	202,012	28,705	33,143
30,342	262,297	470,615	282,393		
41,863	4,726	624,777	528,924	367,113	360,107
5,765	4,662	326,621	298,637	667	
35,131	64,064	477,197			
151,622	61,321	2,972,858	2,387,982	2,807,956	2,553,836
5,186	66,054	452,804	390,822	5,159	
3,815	1,722	262,936	228,130	8,481	8,370
30,579	5,643	305,999	271,388	44,698	36,876
2,900	8,556	100,392	85,863		41
8,246	8,822	343,294	309,296	193,700	133,429
8,280	140,547	911,108	765,685		
3,498	32,243	113,314	105,764		
2,172		91,937	93,759		
124,808	33,291	2,837,131	2,206,339		
56,535	4,894	310,630	368,074	319,887	257,223
37,723	77,182	287,166	233,584	39,446	4,150
1,802	1,688	156,920	92,367	60,301	
	258,400	258,400	230,400	501	
	62,680	62,680	61,408		
	84,798	84,798	70,161		
	18,161	18,161	12,608		
$1,273,783	$1,403,873	$26,611,218	$21,930,755	$7,935,866	$6,502,369
83,296	20,951	887,549	331,917		
416	7,228	267,787	90,667		
$1,357,495	$1,432,052	$27,766,554	$22,353,339	$7,935,866	$6,502,369

SUMMARY OF TRUST
YEAR ENDED

Endowed Funds

	Balance June 30, 1965	Bene-factions	Net transfers and other additions and (deletions)	Balance June 30, 1966
Trust Funds				
Scholarships, fellowships, prizes, bursaries, loan and composite funds—				
Endowed	$ 7,893,590	$470,295	$(246,691)	$ 8,117,194
Expendable				
Lectureships—				
Endowed	163,230		9,800	173,030
Expendable				
Departmental funds—				
Endowed	1,920,118	14,561	1,537	1,936,216
Expendable				
Research funds—			(note)	
Endowed	7,208,230	52,078	(213,320)	7,046,988
Expendable				
Miscellaneous funds—				
Endowed	277,148	14,809	230,627	522,584
Expendable				
Pension funds—				
Expendable				
Sub-totals—endowed funds	17,462,316	551,743	(218,047)	17,796,012
—expendable funds				
Faculty and departmental endowments	8,012,275			8,012,275
Totals—				
Endowed funds	25,474,591	551,743	(218,047)	25,808,287
Expendable funds				
	$25,474,591	$551,743	$(218,047)	$25,808,287
General Endowment	$ 2,283,271	$ 3,785		$ 2,287,056

NOTE: Includes transfer of $213,320 from endowed funds to expendable funds as directed by the Governors with the approval of the benefactor.

AND ENDOWMENT FUNDS
JUNE 30, 1966

Expendable Funds
(including income from endowed funds)

Balance June 30, 1965	Benefactions	Income earned during the year	Net transfers and other additions and (deletions)	Disbursements	Balance June 30, 1966
$ 575,971	$ 37,475	$ 397,174	$ 16,473	$ 288,268	$ 738,825
1,409,169	716,929	29,265	97,490	802,289	1,450,564
22,535	500	4,676	2,082	10,840	18,953
11,564	50	44		4,058	7,600
113,395	1,000	106,635	(60,967)	12,960	147,103
3,164,993	1,257,601	112,162	416,868	1,940,150	3,011,474
142,954	5,000	355,861	421,554	285,649	639,720
3,682,743	7,183,387	35 ,468	(25,026)	6,720,507	4,156,065
3,303		21,741	(14,221)	4,803	6,020
1,495,289	169,816	89,256	(267,926)	211,402	1,275,033
2,223,737		107,392	518,000	2,557,631	291,498
858,158	43,975	886,087	364,921	602,520	1,550,621
11,987,495	9,327,783	373,587	739,406	12,236,037	10,192,234
201,030		367,291	(372,141)	52,627	143,553
1,059,188	43,975	1,253,378	(7,220)	655,147	1,694,174
11,987,495	9,327,783	373,587	739,406	12,236,037	10,192,234
$13,046,683	$9,371,758	$1,626,965	$732,186	$12,891,184	$11,886,408

SUMMARY OF BENEFACTIONS AND

YEAR ENDED

SOURCE OF

	Government			Corporations and industry
	Federal	Provincial	Municipal	
Trust Funds				
Scholarships, fellowships and Prizes				
Endowed				$ 12,850
Expendable	$ 21,750	$ 6,000	$1,200	247,833
Bursaries—				
Endowed				1,100
Expendable		14,853		21,258
Loan funds—				
Endowed				
Expendable				
Composite funds—				
Endowed				
Expendable				
Lectureships—				
Expendable				
Departmental funds—				
Endowed				
Expendable	14,535	267,700		132,602
Research funds—				
Endowed				
Expendable	4,764,265	279,607		331,405
Miscellaneous funds—				
Endowed				
Expendable				1,073
Total trust funds—				
Endowed—statement 4				13,950
Expendable—statement 4	4,800,550	568,160	1,200	734,171
Recoverable research funds—				
Expendable	745,023	30,950		
Capital funds—				
Expendable—statement 6	449,412		240,000	2,000
Debenture repayment— statement 6		151,859		
Sinking funds—				
Expendable—statement 6		1,075,000		
Total endowed funds				$ 13,950
Total expendable funds	$5,994,985	$1,825,969	$241,200	$736,171

GOVERNMENT CAPITAL GRANTS
JUNE 30, 1966

FUNDS

Associations and Foundations	Individuals and Estates	Joint Funds	Other	TOTAL Endowed Funds	TOTAL Expendable Funds
$ 6,000	$ 424,364		$ 5,700	$448,914	
97,469	77,365	$ 475	35,132		$ 487,224
1,130	15,736			17,966	
81,183	21,370		21,700		160,364
	50			50	
4,000	25,659				29,659
	3,365			3,365	
23,239	53,918				77,157
500	50				550
	14,061		500	14,561	
105,500	543,529	181,790	12,945		1,258,601
	52,078			52,078	
904,154	182,601	7,800	718,555		7,188,387
	14,809			14,809	
1,000	164,543	3,200			169,816
7,130	524,463		6,200	551,743	
1,217,045	1,069,035	193,265	788,332		9,371,758
202,567			188,616		1,167,156
	200,133	117,735			1,009,280
					151,859
					1,075,000
$ 7,130	$ 524,463		$ 6,200	$551,743	
$1,419,612	$1,269,168	$311,000	$976,948		$12,775,053
				Total Benefactions	$13,326,796

SUMMARY OF

YEAR ENDED

Trust Funds To Be Expended on Building Programme

	Trust funds for general programme	Trust funds for specific programmes	Total
Balance of funds June 30, 1965	$6,132,079	$3,356,906	$9,488,985
Add:			
University's share of distributions from the National Fund for the University of Toronto	105,000		105,000
Grants and payments on account of grants—			
Canada Council grants for New College		337,500	337,500
National Research Council grants for Computer		111,912	111,912
Metropolitan Toronto grant for School of Business and School of Social Work		240,000	240,000
Dr. R. S. McLaughlin for Planetarium		200,000	200,000
Other benefactions	2,025	12,843	14,868
	107,025	902,255	1,009,280
Income from capital funds investments	355,043	157,563	512,606
E. C. Whitney Bequest—sale of shares		68,923	68,923
Appropriation from specific current operating revenue for computer facilities		314,879	314,879
Funds available through amortization against operating income of discount on 1970 debentures	10,714		10,714
Proceeds from sale of land	425	16,100	16,525
	473,207	1,459,720	1,932,927
	6,605,286	4,816,626	11,421,912
Transfers to trust accounts of unused funds previously transferred for Aerospace addition		(5,065)	(5,065)
Transfer from trusts for Ford Foundation grants		110,422	110,422
Transfer from current funds	5,175		5,175
Transfer to general endowment in capital assets in respect of trust funds and grants applied against construction of buildings and purchase of properties and equipment during the year including $180,000 paid to the University of Toronto Press	(416,479)	(1,328,981)	(1,745,460)
	(411,304)	(1,223,624)	(1,634,928)
Balance of funds June 30, 1966	$6,193,982	$3,593,002	$9,786,984

CAPITAL FUNDS

JUNE 30, 1966

General Endowment in Capital Assets

Balance June 30, 1965—(note 3)			$190,902,202
Add:			
Province of Ontario grants for capital debentures		756,859	
Less interest portion carried to current operating account		605,000	
Debenture principal repayment			151,859
Trust funds and grants applied against construction of buildings and purchase of properties and equipment during the year			1,745,460
Additions to endowment resulting from provisions for sinking funds for retirement of debentures—	Debentures maturing in		
	1970	1969	
Provincial grants received	$275,000	$ 800,090	1,075,000
Interest on sinking fund investments	291,108	401,838	692,946
	566,108	1,201,838	1,767,946
Less amortization of discount on debentures	10,714	116,975	127,689
	$555,394	$1,084,863	1,640,257
Balance June 30, 1966			$194,439,778

(*Continued from page 47*)

Government practice. Annual grants from the Province, shown separately in the financial statements, cover the interest and sinking fund charges on these debentures.

The Trust and Endowment Funds section of the Balance Sheet (Statement 1) reflects a reduction of "expendable" trust funds held for student awards, research, pension funds, etc., from $13,046,683 to $11,886,408, caused principally by the transfer of a free pension reserve, accumulated under an earlier plan, to the newly established 1966 Pension Fund in partial payment of the liability assumed for increased "past service" benefits of long service members. Trust assets held for safekeeping also fell sharply from $7,318,567 to $3,009,039 as Connaught Medical Research Laboratories drew on its building reserve for construction of major new buildings and equipment at its new Dufferin and Steeles Avenue headquarters.

In the Statement of Income and Expense (Statement 2) Scarborough and Erindale Colleges assumed more significant proportions as Scarborough accepted its first full-time day students and Erindale stepped up its pre-opening organizational and planning activities, including the accumulation of library books.

Fee income reflected larger student numbers but accounted for only 16.1% of total income, down slightly from the previous year. Government grants increased from 55.6% to 59.4% of total income, a reduction in Federal grant income being more than offset by increases in Provincial operating grants. It is noticeable, however, that the major deficit incurred in 1964–65 when a change in the dates of payment of Provincial grants deprived the University of Toronto of $1,207,000 which it had properly expected to receive in that year, has not yet been wiped out by any remedial action on the part of the Province. A small net income on 1965–66 operations left a deficit of $704,650 outstanding at June 30th, 1966, and it is still assumed that the Province will take some action to overcome the results of its unannounced and unanticipated change of procedure.

Statement 6 lists a number of capital grants and gifts received during the year, one of which was an initial sum of $200,000 from Colonel R. S. McLaughlin on account of a gift of more than $2,000,000 for the construction and equipping of what will be one of the finest planetaria in existence when it is completed in 1967.

Contributions to the Varsity Fund continue to be a source of gratification and encouragement to the University and to the contributors to this and to other University activities, a grateful "thank you".

FRANK R. STONE, *Vice-President (Administration)*



They Write Final Reports as Deans

Dr. Vincent Bladen, *left*, retired as Dean of the Faculty of Arts and Science at the end of the 1965–66 academic year, continuing on staff as Professor in the department of political economy. He spends two days a week at Scarborough College. Dr. John Hamilton left his post as Dean of Medicine to become Vice-President for Health Sciences. Dr. R. R. McLaughlin, who retired as Dean of Applied Science and Engineering, is now Chairman of the University's Planning Committee.

Substantial sections of their final reports as deans appear in this issue. Dr. Bladen's review of the academic year begins on page 22 and Dr. McLaughlin's on page 43. Dr. Hamilton discusses Sunnybrook Hospital on page 2 and starts his annual report on page 15.

VARSITY

GRADUATE

UNIVERSITY OF TORONTO SPRING 1967



Professors Cranford Pratt and Gordon Skilling, citizens of the One World of Higher Education

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VARSITY
GRADUATE

Volume Thirteen **Number Three**

May 1967

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Professor W. A. C. H. Dobson, author of "Understanding China" (*page 66*) a major contribution to one of the great debates of our time.

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The Editor of VARSITY GRADUATE is Kenneth S. Edey, director of the University's Department of Information. The other members of the department are Lawrence F. Jones, assistant director; Leonard Bertin, science editor; Crawford Grier, humanities and social sciences; Mrs. Winogene Ferguson, information officer, and Mrs. Doreen McMeeken, production supervisor.

Other periodicals published by the Department of Information are VARSITY NEWS, in October, December, March and May for graduates and former students; and STAFF BULLETIN, eight issues each academic year.

Requests for rate cards and other information about advertising should be addressed to Mrs. Jean Balint, VARSITY GRADUATE'S advertising representative, at Department of Information, Simcoe Hall, University of Toronto, Toronto 5, Telephone 928-2105.

School of Business and Department of Political Economy join forces to build an econometric model designed to alert Canadian business men in 1967 about what is likely to happen in 1968

An electronic prophet will chart economy

LET US SUPPOSE, dreadful though the thought may be, that the Minister of Finance is considering an increase of five per cent in personal income tax.

If such a thing were to be contemplated, what would the effect be upon unemployment? What would happen to consumer prices? How long would it be until the effects were felt?

Economists have difficulty in finding quantitative answers to questions such as these by the use of standard forecasting methods, described technically as leading indicators and diffusion indexes. What they need is a tested theory of how the economic system works, including an understanding of the length of the time-lags in the system. This kind of knowledge cannot be obtained by just observing the economy in action, because the many changes in economic conditions over a period of time make it impossible to isolate by simple observation the effects of a change in a single policy variable such as the income tax rate.

Nor can the economist carry out controlled experiments to determine the effects because the behaviour of a free economic system cannot be made the subject of experiments.

What the economist can do is construct a model of the economic system and conduct his experiments on the model, which will forecast the future behaviour of the economy. That's what a group of economists in University of Toronto's School of Business and Department of Political Economy have accepted as a joint research project — the building of an econometric model which will enable them, before the end of the year, to forecast the course of the Canadian economy in 1968.

An econometric model, says Professor John A. Sawyer of the School of Business, who is co-ordinator of the project, is a mathematical device in which the effects of alternative fiscal and monetary policies upon the economy can be analyzed quantitatively and supply a continuing annual forecast of the gross national product, its major components, and other aggregative statistics. The information obtained through the model should help to improve the level of public debate on fiscal and monetary policies, Professor Sawyer believes; the model should become a useful addition to the



Teaching managers to manage

The U of T School of Business is helping business managers to find better ways of bringing out the best in their senior people. This year, the first of two two-day seminars attracted business people from as far away as Vancouver, Edmonton and Fredericton. *Above*: A. A. Lackman, Air Canada, with H. J. A. Chambers, chairman of the board of a Rexdale company. *Below*: a panel of specialists in personnel training, right, fields questions from executives taking the course.



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sources of information available to business men for their own economic forecasting.

In order to obtain a picture of the economy, four faculty members — Professors Sawyer, N. K. Choudhry, Yehuda Kotowitz and J. W. L. Winder — and eight graduate students have been working a large part of their time since last summer on the model. Last fall they were joined by Professor T. M. Brown of Queen's University as a consultant on the project.

They first grossly simplify the available facts since 1926, with adjustments made for the years of World War II, by aggregation groups, such as the grouping of all expenditures by households, business firms, and governments. Thus they create an image of the economy in several sectors which carry on a great number of transactions with each other. Because social scientists do not have laboratories and would have difficulty in building a model of the economy with cumbersome tubes through which liquids would flow, they use mathematics for their model, making use of the mathematical notion of fractions and input-output. The mathematical notion of a function expresses the idea of a theory.

The economists set down on computer cards the various relationships possible in the economy — credit conditions, personal income, tax rates, consumer price indices, capital expenditures by business, imports, exports, all situations that are simultaneously interrelated. When some 20 equations that describe these inter-relationships can



University of Toronto Press Printing Plant, completed Spring 1966

Erindale College, first building, to be completed August 1967



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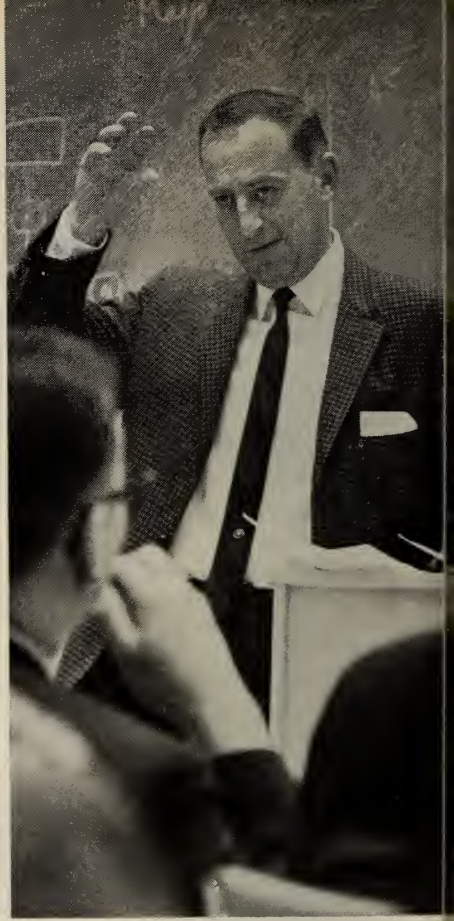
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The study-day for executives attending the School of Business management seminars was from 8.30 a.m. until after 5. Even during coffee breaks, *left*, they talked business. A. A. Lackman, *right*, was one of the lecturers.

be solved simultaneously, the model produces a picture of what is happening to the economy and what is likely to happen.

The economists tackle such questions as these: What are the total wage and salary bills? How many men and women are unemployed? Why are more people out of work at one time than another? What makes prices rise?

An econometric model, says Professor Sawyer, should enable economists to determine what fiscal and monetary policies government ought to adopt in order to attain a particular objective; for instance, by what amount should taxes be increased, if at all, to reduce the cost of living.

By the end of 1967 the U of T model should be able not only to fore-

have you considered India?



IT was the most blissfully peaceful sight to sit there on the sundeck of our houseboat on Dal Lake and watch the sun go down behind the hills of Kashmir.

That morning, the barber and the man to collect the laundry came paddling up to the door, and every day meals too tempting to resist were prepared for us by our own cook and served by our own uniformed waiter. (I really hate to tell you what happened to my diet!)

The most energetic thing we had to do was to write our postcards in time for the little red boat marked "post office" that arrived with bells tinkling to pick up the mail.

One evening when the moon was high, we hired our own water taxi, called a "shikara", and the boatman paddled us along the shore while we breathed in the still night air.

But another evening, we just stayed aboard our houseboat, with the improbable name "Butterfly", to relax in the luxury of it all — sitting room, dining room, two bedrooms and two bathrooms.

And do you know what it cost? $12 a day for two.

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Just contact your travel agent, or the Government of India Tourist Office, 177-179 King St. W., Toronto 1.

India

International Tourist Year 1967 "Tourism: Passport to Peace."

cast the gross national product for 1968 but also to compare the production of Canada with that of other countries. Professor Sawyer hopes that later he and his colleagues will be able to make quarterly forecasts.

The cost of planning, setting up and operating the University of Toronto model will run to well over $100,000 in the first three years. Once well under way, however, the sponsors of the model believe it can be operated quite inexpensively, perhaps for as little as $5,000 a year.

Financial help for the model has come from the federal Department of Labour universities research grant, the Canada Council, two foundations, and 14 major companies — three in life insurance, six manufacturers, a petroleum company, one railway, a communications company, a department store and an investment dealer. The Institute of Computer Science gives time on its IBM 7094 (II) without charge.

Findings available to public

When all of the several econometric models now in operation or planned are in use, Professor Sawyer expects that there will be an exchange of information among them. However, at least some of the information and forecasts from government models may have to be kept confidential. The work at U of T will be of special value because the forecasts will be in the public domain.

There is an international aspect to the research. University of Pennsylvania has a quarterly model for study of the American economy. Because the economies of the United States and Canada are so closely related, Professor Choudhry is spending eight months in Philadelphia, co-ordinating the data compiled there for use in the University of Toronto model.

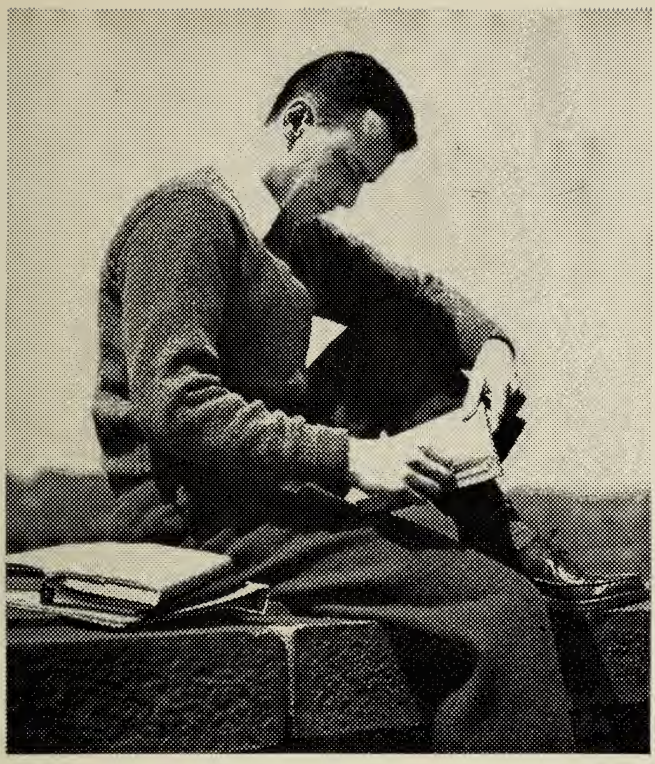
It is hoped that the project will help to train and increase the number of econometricians needed by business and governments and by universities as teachers. Only a few university students specialize in the subject now, although the demand for experts in the field is likely to increase rapidly in the years ahead.

"It will be some years before our model and the others under way are working with only a small percentage of error", says Professor Sawyer. "But we hope for eventual perfection, or close to it."

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This summer's "instant Russian" workshop will round out a year in which Varsity's Centre for Russian and East European Studies has stimulated a brisk exchange of people and ideas with the U.S.S.R.

Our Three Russians

LAWRENCE F. JONES

IN THE GALLERY of the Ontario Legislative Building a young man listens intently to a debate in the chamber below. In the library of the Department of Labour at Ottawa another young man carefully examines stacks of books, records and documents.

In the Galbraith Building of the University of Toronto a third young man adjusts again and again the circuits of an analogue computer.

They have one thing in common, these serious scholars in their sober, dark suits of conservative cut: they are all from the Soviet Union. Their names are Alfii Shepel, Oleg Soroko-Tsupa, and Anatolii Tiutin, this year's students in the exchange scheme arranged by U of T's Centre for Russian and East European Studies with the U.S.S.R. Ministry of Higher Education.

Meanwhile, at the University of Moscow three graduates of University of Toronto are spending nine months in study and research in subjects of their choice. Oleh Walter Gerus is in history, Samuel David Cioran and William Dovhey are working on Slavic languages and literatures.

This exchange of students, begun in 1963 through the interest and effort of Professor Gordon Skilling, director of the Centre for Russian and East European Studies, is only one part of a stimulating and increasing intellectual "trade" between U of T and equivalent institutions of higher learning in the U.S.S.R. During the 1966–67 academic

year, several Soviet scholars have visited the St. George Campus, Varsity professors have been in Russia, and, in other ways too, the University and the Soviet Union have paid more attention to each other than ever before.

The stay of the Russian students here is made possible because of financial help from the Laidlaw Foundation as well as the sympathetic support of the University of Toronto itself. Each man lives in residence and works on his program under the supervision of a faculty adviser.

Alfii Shepel has the benefit of two mentors — Professors Stefan Dupré and Myer Brownstone of the Department of Political Economy. Mr. Shepel, a lawyer at home, is working for a higher degree at the Moscow Juridical Institute. Before he left home last September, Mr. Shepel, with the approval of his teachers, decided to write a thesis on the structure of the government of the Province of Ontario. Professor Dupré arranged for Kenneth Bryden, a member of the Ontario Legislature, to introduce Mr. Shepel to the intricacies of government and politics in this province.

At Queen's Park Mr. Shepel talked to members of the Legislature, to political party leaders, and to senior government officials. Everyone he met was courteous and helpful, he said, and he now knows more than the vast majority of Ontario residents about the inner workings of the provincial government.

Oleg Soroko-Tsupa had a special reason for wanting to come to Canada — he taught Canadian history to a class of five graduate students at the University of Moscow. He is a lecturer in the "chair" (approximately the equivalent of a Canadian university academic department) of modern and contemporary history.

Under the guidance of Professor Kenneth McNaught, Mr. Soroko-Tsupa is studying the history of the labour movement in Canada since the 1920s, including labour-management problems and governmental policies. He spent weeks in Ottawa at the Public Archives and the Department of Labour library. There was so much material there of interest to him, and so much more to go through before the end of June that he will do no writing at all until he returns home. All he wishes is that he had more time for his research here and perhaps to see a little more of Canada than he has been able to do — he does not think his visits to Toronto, Ottawa, Montreal and Niagara Falls have been enough.

Mr. Soroko-Tsupa keeps in touch with Canadian historical scholarship at his university by reading the *Canadian Historical Review*. He was so interested in this journal that in the fall of 1965 he wrote a critique of the *Review* for publication in *Vorosy Istorii* (Questions of History). The *Review* editors liked his appreciation of their journal, had the article translated, and published the English version last spring.

Anatolii Tiutin is a graduate student at the Polytechnical Institute at Kiev, capital of the Ukraine, a school of



Anatolii Tiutin and Professor H. W. Smith



Vice-Chancellor Janghir Kirimov of Leningrad University

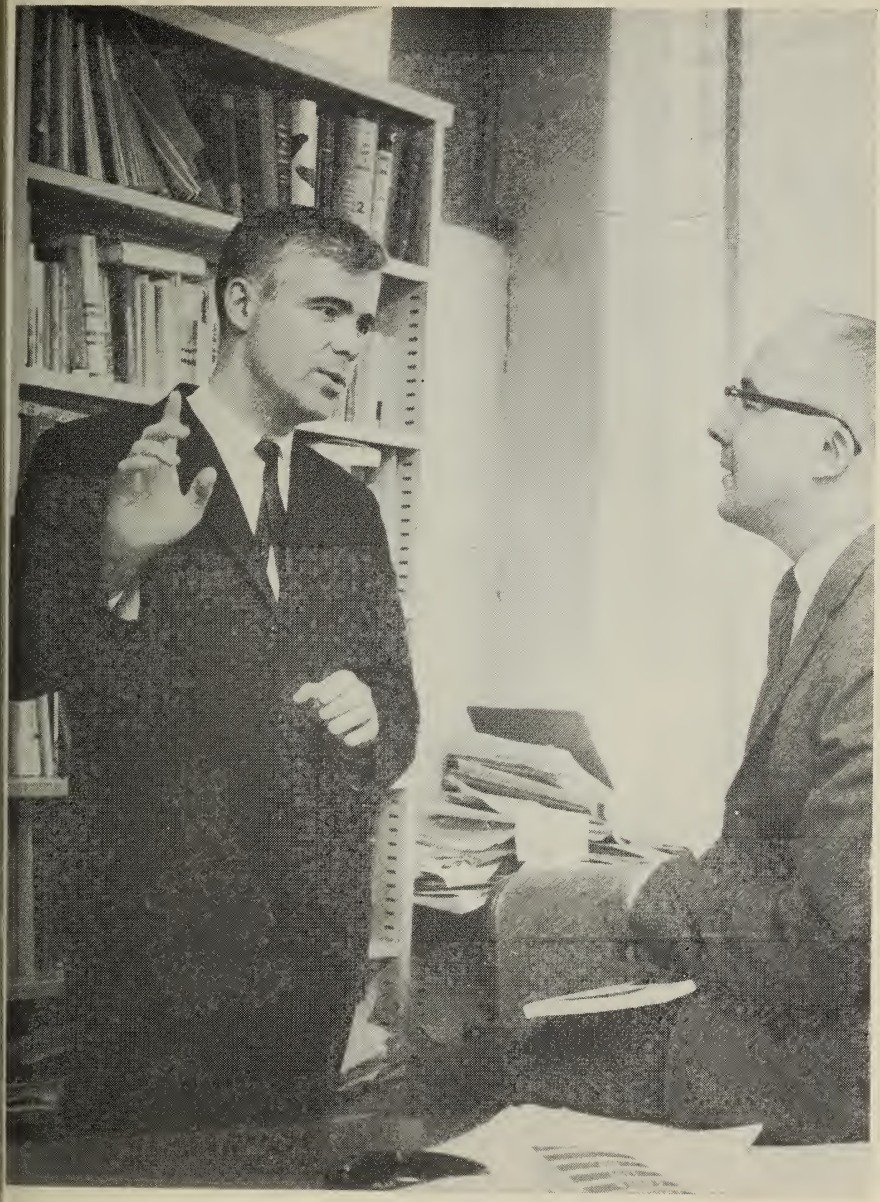
advanced science which, he says, has 5,000 students and a staff of 2,000. He is working for his "Kandidat" degree, which stands approximately between a Canadian M.A. and Ph.D., although Mr. Tiutin does not think it is parallel to the University of Toronto's Master of Philosophy degree.

With the assistance of Professor H. W. Smith of Electrical Engineering, Mr. Tiutin is studying the complexities of the analogue computer. His only complaint — and he expresses it mildly — is that U of T's analogue computer is obsolete, with which criticism Professor Smith agrees, and hopes that before too long funds may be found to provide the University with the latest model.

While the exchange students were immersed in their studies, the University welcomed several distinguished Russian scholars to the campus. One of them was Professor Janghir Kerimov, Vice-Chancellor and Vice-Rector of Leningrad University, professor of law, and one of the outstanding authorities on law and jurisprudence in the Soviet Union. He was in Canada for a month, calling at McGill and Carleton Universities as well as U of T, and on the Department of External Affairs in Ottawa. His principal purpose was to explore the possibility of expanding the annual student exchange between Leningrad and Canadian universities and perhaps arranging a more formal exchange of professors.

Professor Kerimov was welcomed to the University by Vice-Provost John H. Sword in the absence of President Claude Bissell, who was at a meeting of Ontario university presidents. The visitor from Leningrad had an opportunity to meet Dr. Gilbert de B. Robinson, Vice-President (Research Administration), Professor Donald Forster, Executive Assistant to the President, and Dr. Skilling. After an informal exchange of views, Dr. Kerimov later in the day discussed the work of Leningrad's Institute for Complex Social Research at a seminar arranged by Dr. Skilling.

Another notable visitor to the campus was Dr. Iurii M. Saarma, professor of psychiatry and legal medicine, and Dean of the Medical Faculty at Tartu State University in the Estonian Republic of the U.S.S.R. Although he spent much of his time at the Clarke Institute of Psychiatry, Dr. Saarma



Alfii Shepel has a question for Professor Stefan Dupré



Oleg Soroko-Tsupa with Professor Kenneth McNaught



Dean Iurii Saarma, Tartu, visits Professor Skilling

visited the Centre for Russian and East European Studies and gave a lecture on mental illness and its treatment in the Soviet Union.

Among other visitors to the University in the current academic year were three professors from the Soviet Academy of Sciences: E. R. Mustel, V. I. Spitysn of the Institute of Physical Chemistry; and A. B. Nalbandyan of the Institute of Chemical Physics. Another scholar who met his counterparts at U of T was Dr. O. Avaste of the Institute of Astrophysics at Tartu State University.

University of Toronto staff members were active in the Soviet Union. Dr. Skilling was there for five weeks, conferring with officials of the Ministry of Higher Education and visiting universities at Moscow, Leningrad, Kiev and Minsk. Professor H. S. M. Coxeter attended sessions of the International Mathematics Union at Dubna, near Moscow, and Professor J. E. Guillet made a lecture tour of polymer laboratories in the Soviet Union. Nearly a dozen other staff members were in Moscow for the meetings of the International Congress of Psychology and the International Congress of Microbiology.

Much more is under way at the Centre for Russian and East European Studies than the exchange of students and professors. For example, thanks to a Canada Council grant, Professor Robert H. McNeal has in hand a major study in Soviet Russian studies, in which he will have two principal associates, one of whom is to be Professor Richard Gregor of the Department of Political Economy. They expect to begin work this summer and to complete the project in two years' time.

They will produce an annotated translation of a selection of fundamentally important documents of the Communist Party of the Soviet Union. The western world lacks a solid collection in English of source material dealing with the internal affairs of the Communist Party in Russia, although there has been considerable publication of the theoretical writings of Lenin and his successors. Among subjects requiring fuller treatment are party programs and statutes and the more important resolutions of party bodies.

Much of the material is contained in a 2800-page, three volume document entitled, "The Communist Party of the Soviet Union in Resolutions and Decisions of Congresses, Conferences and Plenums of the Central

Committee". There are other documents too — Menshevik, Trotskyite, Stalinist and Khrushchevist — that have at one time or another been removed from Soviet historiography and which should be restored to their proper place in Communist Party history.

Professor McNeal and his colleagues will make a penetrating selection from the three volumes of resolutions and decisions, translate them into English, and prepare commentaries on the history, significance and context of each item. Then they will seek, in libraries at such universities as Harvard, Columbia and Stanford, missing and suppressed documents and treat them in similar fashion.

While there are programs for graduate students, the teachers and the researchers, the Centre for Russian and East European Studies has not overlooked the beginner. For him (or her) it has provided the Summer Russian Workshop, in co-operation with the Division of University Extension. This in a sense will be the way to learn "instant Russian" in about eight weeks.

In that short time, by the use of modern methods, the summer school student will complete the content of one full undergraduate course in the Russian language at any one of three levels — elementary, intermediate and advanced. Dr. Skilling plans to expose students to nothing but the sound of the Russian language from the beginning of the course. He wants to create a Russian atmosphere by showing Soviet films, staging plays in Russian, requiring the students to speak only Russian at lunch and dinner — to work and play in the language.

This will be the first summer school of its kind in Canada, although there are several similar schools in the United States. Serge Kononoff of the Centre staff visited U.S. universities in 1966 to see how they operated their schools, and, with their experience and the particular needs of Canadians in mind, worked with Dr. Skilling on organization of the Workshop. The Department of Slavic Studies is providing the teaching staff, drawing where necessary from other Canadian universities to round out a full complement of the most able instructors.

The Summer Workshop, in addition to teaching the language, is offering a reading course in the humanities and social sciences for graduate students and a special course in scientific Russian. There is also a course for graduate students interested in the Centre's exchange program. All of the teaching will begin on July 4 and continue until August 25.

There has been a definite need for such a summer school, Dr. Skilling says. Business men who want to trade with Russia, journalists who are thinking of going there as correspondents, serious students who would like to acquire a working knowledge of Russian in a hurry — all such men and women may find in the Summer Russian Workship the way to meet their need. Until this year they had to go to the United States for "instant Russian". Now it will be available at home.

Canada's "purposeful and increasing involvement" in the world around us is reflected in the President's year at Harvard, continuing assistance for Tanzania, and an infusion of $100,000 for study and research

International Studies: a widening circle

ESTABLISHMENT this academic year of an International Studies Program has emphasized the University's growing role in the one world of higher education. The program, financed for its first two years by a $100,000 bequest, is directed by Professor R. Cranford Pratt.

Benefits flow both ways in what President Claude Bissell has called the purposeful and increasing involvement of Canada as a major middle power and our responsibility as a leading Canadian university. "Our universities," he said recently, "dearly need the open windows and the vistas that international participation can give."

The President is giving active leadership on the international scene. Early in March he returned from Viña del Mar, Chile, and a five-day meeting of the Council on Higher Education in the American Republics. Later in the month he accepted an invitation to spend a year at Harvard University where he will launch a professorship of Canadian Studies. The appointment takes effect in July.

Dr. Henry Borden, chairman of the U of T Board, commented that he and his fellow governors had agreed to Dr. Bissell's absence for one year "as a University of Toronto centennial contribution to the stimulation of better understanding of Canada in the United States".

Professor Pratt took over his new post after spending five years as the first principal of University College at Dar-es-Salaam, now a unit of the University of East Africa. On leave from the department of political economy, he was the chief fund-raiser for the college buildings and the chief architect of the academic program. He also served as economic adviser to Tanzania's President Julius Nyere.

The central agency Professor Pratt directs at University of Toronto is designed to stimulate and co-ordinate disciplinary studies, including research

and graduate teaching, in subjects related to current world affairs. Emphasis is on social sciences and new languages programs.

Study and research are being encouraged in a number of ways. For example, a student or a professor may be engaged in a project having to do with India. He discovers that the only way to obtain all the material he needs is to go there — but this he cannot afford. If the need can be demonstrated, the International Studies Program will provide a travel subsidy.

Another example: a department wants to engage a specialist in a particular field but lacks funds for the full salary demanded. Once satisfied that the appointment is justified the agency will make up the difference. In this way our international program is being strengthened by people who would otherwise join U.S. universities with larger operating budgets.

I.S.P. arranges seminars for staff and graduate students in new research techniques. As funds permit — major U.S. foundations are a potential source — special graduate fellowships will be provided, visiting professorships established, and grants for research and library acquisitions offered, all in the field of international studies with particular emphasis on the social sciences.

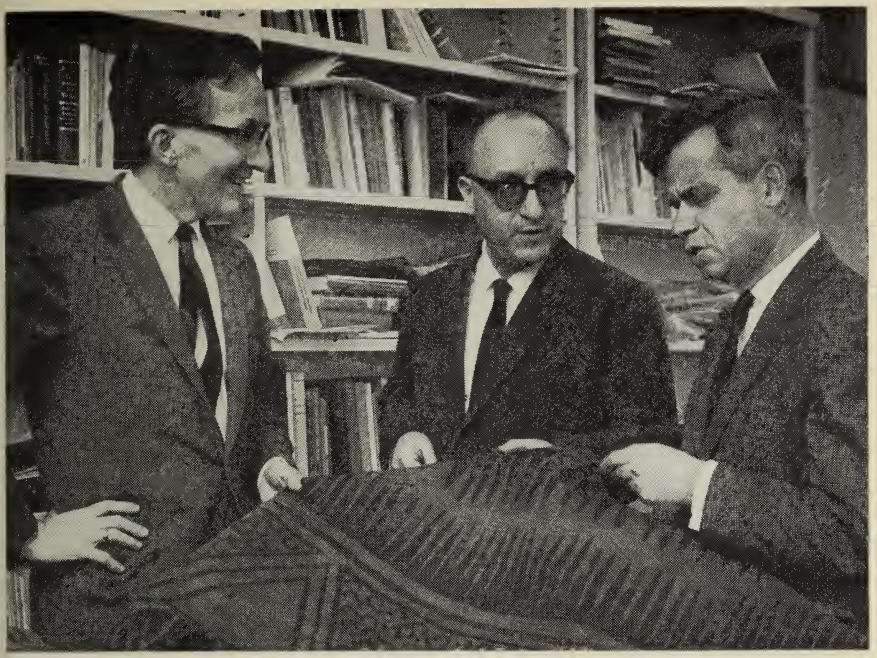
The University is not neglecting its established role in providing help to emerging nations. Three professors from the department of political economy are now in the young republic of Tanzania.

Professor Thomas Easterbrook, chairman of the department, is spending a year at Dar-es-Salaam as economic adviser to the Minister of Economic Affairs and Development Planning. With him in the ministry is Professor D. M. Nowlan. The third year-long visitor to Tanzania is Professor Gerald Helleiner, who is acting as director of the economic research bureau at University College there.

In the broad range of the humanities, the University of Toronto has long offered courses, and has encouraged advanced study and research in the language, literature, history, thought, and institutions of other cultures and states. The political and economic relationships of these states with Canada have not been overlooked. Special attention has been paid to Islamic and Near Eastern studies, the civilizations of China, Japan and India, studies of Russia and Eastern Europe, and more recently, the problems of Latin America.

Dr. Bissell has pointed out that teaching and research in these areas will be greatly encouraged with completion of the Humanities and Social Sciences Research Library (work on which is to begin this year). "This will dramatically increase our research facilities for both staff and graduate students," he said.

One of this year's events on the St. George campus was a weekend conference on Latin America. As the conference was for undergraduates the International Studies Program could not give it major support, but Professor Pratt worked with Professor Peter Russell and Ian Lumsden, special lecturer on the political eco-



A piece of bark cloth, made from the entire outer skin of the large mvuli tree by natives of Tanzania, attracts the attention of three professors in the office of the International Studies Program. Dr. R. Cranford Pratt, I.S.C. director, *left*, shows this souvenir of his five years at Dar-es-Salaam to Dr. Gino Germani of Harvard and Dr. Kurt Levy. Professor Germani, originally from Argentina and an outstanding authority on Latin American affairs, was on campus to address graduate and honours students under the auspices of the Department of Italian and Hispanic Studies. Professor Levy of that department spent a year in South America before he helped Professor Geoffrey Stagg to organize the U of T honour course in Latin in American studies.

nomy of Latin America, in organizing the affair. A contribution from the Varsity Fund helped to make the conference a success.

Aspects of rural Latin America were discussed. Speakers dealt with the problems of mushrooming slums, student politics in Argentina, technological change and industrialization in Mexico, Cuba and the Dominican Republic. In addition to U of T staff members, participants included a Canadian diplomat, a business man well versed in Latin American affairs, and professors from the University of Western Ontario, Sir George Williams University, and the University of Ottawa. A special feature was a Latin American Fiesta, held at the International Student Centre.

Among authorities on various aspects of international affairs who have

visited U of T this year was the Italian-born Argentine scholar, Professor Gino Germani, Monroe Gutman Professor of Latin American Affairs at Harvard.

Sponsored by the Department of Italian and Hispanic Studies and introduced to the campus by Professor Kurt Levy, Dr. Germani gave two lectures, one on military intervention in Latin American politics, the other on the stage of modernization in Latin America.

Another window on the world: As this issue was being manufactured, Dr. Bissell announced the establishment of a professorship in Czech and Slovak literatures. He said it has been made possible by a "very splendid benefaction" from supporters of the Masaryk Memorial Institute, Inc., and the Czechoslovak National Association of Canada.

The professor to be appointed will give both undergraduate and graduate courses.

"Gifts such as this enable the University to make distinctive contributions to scholarship," the President added.

Harvard and Toronto put Education to work in a good cause

Through education we can live together, talk together, understand together, grow together. In these words did Harvard's President Nathan Pusey describe the underlying philosophy of his university's decision to establish a professorship of Canadian Studies and the election of Toronto's President Claude Bissell to launch it. More than $600,000 has been contributed towards the project by 86 Canadian and 45 U.S. corporations.

"I am grateful to the Board of Governors for enabling me to accept the position at Harvard," Dr. Bissell said. "I look forward to a year of teaching and research at this great centre of learning, and to the opportunities of discussing Canadian affairs with young Americans. I am confident that my experience during the year will also be helpful after my return in July, 1968, since I shall have had the chance to observe University problems from a different perspective. I have made recommendations to the Board of Governors for administrative arrangements during my absence which I believe will be wholly acceptable to the University."



Lady Stow, the wife of Barbados Governor-General, and Victor A. A. Archer, U.W.I. resident tutor, sat with the President at a dinner given for him by University of Toronto alumni at bridgetown in February

The Caribbean Connection

The jet corridor between University of Toronto and University of the West Indies shows signs of becoming a two-way thoroughfare.

Among U of T professors and administrators whose flights to the islands this year pointed up the ties between the two universities were:

¶President Claude Bissell to deliver the convocation address at U.W.I. (Barbados);

¶The Vice-President (Administration), Frank Stone, whose study of the U.W.I.'s administrative and financial needs in Jamaica, Barbados and Trinidad was sponsored by the Ford Foundation;

¶Professor Benjamin Schlesinger of the

I think of students from this island, and from others, who have come to our Canadian universities, and who have brought, besides scholarly distinction, soft voices to relieve our northern twang, and gaiety to lighten our American seriousness. A day or two before their flight to Barbados, where Dr. Bissell made this comment, the President and his wife met with two members of staff who were born in Barbados and six of the twelve Barbadians studying at U of T this year. Clockwise from left in the accompanying photograph are Melville Callender, Carol Headley, Erold Hinds, Dr. Bissell, Professor F. E. Winter, Leonard Shorey, Professor R. M. H. Shepherd. Seated with Mrs. Bissell are Philip Branch and Miss Doreen Rochester.



School of Social Work, whose year of teaching at U.W.I. (Jamaica) was sponsored by the Department of External Affairs;

¶Professor Charles Hendry, director of the School of Social Work;

¶Professor Peter Silcox, political economy, as a visiting lecturer on Canadian government;

¶Professor Elizabeth Wallace, political economy;

¶Professor Keith Yates, chemistry;

¶Professor A. M. Fallis, head of parasitology, School of Hygiene.

In return, two B.W.I. staff people visited the St. George Campus: Dr. K. L. Stuart for a Graduate School colloquium in chemistry and Dr. David Mettrick, visiting lecturer in zoology.

Dr. Bissell reached U.W.I. (Barbados) seven years almost to a day after his arrival at U.W.I. (Jamaica) on a similar mission. *Continued*



The President's address to convocation in Barbados begins on page 86

There had been no separation of spirit in the interval, he assured the graduating class. "I think I correspond more frequently with your Vice-Chancellor and your Pro-Vice-Chancellor than I do with most of my fellow Canadian presidents," he added; "I have the feeling of a homecoming."

The President's sense of a homecoming was heightened by the presence of U.W.I.'s Chancellor, H.R.H. the Princess Alice.

"Her Royal Highness," he said, "has given to the University of the West Indies the same love and devotion that she and her husband gave to Canada during the years they served my country's highest office."

A highlight of the President's visit was the dinner U of T graduates gave for him at Bridgetown's Windsor Hotel. As will be seen below, the gathering included the Governor-General and his wife. The acting prime minister, Hon. J. Cameron Tudor, was a speaker.

Among old friends who greeted Dr. Bissell were Dr. Gordon Gallie, a 1910 graduate, and Dr. Duncan Graham who, in 1919, became the Commonwealth's first full-time professor of medicine and Varsity's first Sir John and Lady Eaton Professor of Medicine.

These distinguished M.D.'s were classified as young fellows by another guest, Frederick Millar, U.C. '97, later a high school principal in Hamilton. His U of T memories include the student strike of '95.

Below: at the head table for dinner given Dr. Bissell were, from left, Budd H. Rieger, U of T governor and chairman of Sunnybrook Hospital trustees; Mrs. Victor A. A. Archer and Sir Frank Holder, who heads advisory committee for U.W.I. (Barbados) extra-mural department; Mrs. Bissell and the Governor-General, Sir John Stow; Mr. Archer, M.S.A. '33, resident tutor, chairman for the dinner; Dr. Bissell, Lady Stow, U.W.I. Pro-Vice-Chancellor Sidney Martin, Mrs. Rieger. In right foreground is one of our oldest graduates, Frederick Millar, U.C. '97.





The Mona, Jamaica, campus of U.W.I. as seen from a hall of residence

Assignment Jamaica

Benjamin Schlesinger

I was sitting in my office at the School of Social Work, in November 1965, contemplating the next academic year. I had spoken to Dr. Hendry, my director of the School, and had asked for a year off to teach overseas. The door opened, and Dr. Hendry introduced me to Dr. Kenneth Standard, Head of the Department of Preventive and Social Medicine at the University of the West Indies Hospital in Jamaica.

"I think you should go to Jamaica", said Professor Hendry, "just listen to Ken Standard, and you'll get excited. We at Toronto can help out here".

After listening to Dr. Standard, I also became enthusiastic, and felt like leaving for Jamaica immediately. Who would sponsor my trip? Dr. Standard told me that he had talks with officials in Ottawa, and that the Canadian External Aid Office would be willing to consider the request. As he left, I wondered if I'd ever get to sunny Jamaica, the largest English-speaking island in the Caribbean, with a population of 1.8 million.

April 17, 1966: A copy of a letter arrived from the External Aid Office, Ottawa: ". . . we are submitting to you our formal proposal for the second-

Dr. Schlesinger is on leave from the U of T School of Social Work where he is an associate professor

ment to this office of Dr. Benjamin Schlesinger of your University for a technical assignment in Jamaica as a Professor of Social Work at the University of the West Indies, Jamaica, for a period of twelve months beginning on or about Sept. 1, 1966."

That same month, the Board of Governors of the University of Toronto approved my year's leave of absence, without salary (the Canadian Government assumes the salary). The next months flew by, with passports, inoculations, shipping, storage, renting the house, arranging for schooling for our three children (Avi age 5½ and twins Esther and Leo age 3½). We received our airplane tickets from Ottawa, and on Sept. 1, 1966 we flew to Kingston, Jamaica.

There has been an ongoing relationship between the University of the West Indies and the University of Toronto. Dr. Bissell addressed the graduation class of the UWI on February 13, 1960, and the graduating class of the UWI, Barbados, on February 6, 1967. Many of the present faculty are graduates of the University of Toronto. A lot of things have happened to the University of the West Indies since 1960 (Varsity Graduate, May 1960, "A College in the Sun").

A university is born

In 1943 the Secretary of State for the Colonies appointed the Asquith Commission to enquire into Higher Education in the Colonies. The West Indies Committee of the Commission, known as the Irvine Commission, recommended the founding of a University College of the West Indies, to be sited at Mona, Jamaica. Teaching began in October 1948 and the College was incorporated by Royal Charter in January 1949.

The College was accepted by the University of London into a scheme of special relation and students of the University College of the West Indies read for the degrees of the University of London. The scheme of special relationship was continued until April 1962 when the College became the University of the West Indies with the power to grant its own degrees. All students entering since October 1962 have read for degrees of the University of the West Indies. In August 1960 the Imperial College of Tropical Agriculture situated in Trinidad was incorporated into the University College of the West Indies and became the Faculty of Agriculture. This was the first Faculty to be sited outside Jamaica and it was followed a year later by the Faculty of Engineering also situated in Trinidad.

At Mona in Jamaica are situated the Faculties of Arts, Education, Natural Sciences, Social Sciences and Medicine. Students read for both Special Degrees and General Degrees.

The site is 653 acres in extent and is divided between the University and the University Cottage Hospital, the latter being incorporated by a law passed by the Government of Jamaica.

At St. Augustine in Trinidad are the Faculties of Agriculture and Engineering as well as the John F. Kennedy College of Arts and Science whose

students read for General Degrees of the University of the West Indies.

In Barbados is situated another College of Arts and Science, the permanent buildings for which are expected to be completed at Cave Hill in 1967/68 academic year. The Institute of Education is also situated in Barbados.

An integral part of the University is the Extra-Mural Department, headed by a director, who co-ordinates the work of the Department throughout the Caribbean. Resident tutors are stationed in the several territories of the area and are responsible for the work of these territories, and there are staff tutors in Creative Arts, Adult Education and Social Work. The Department is responsible to the University also for the work of the Trade Union Education Institute and the Social Work Centre at Mona.

The Department provides classes and courses for adults, some of the courses being residential, and these are conducted as far as possible at a standard comparable to what is done in the three centres of the University but completion of them does not, at present, count towards the degrees awarded by the University.

Courses are held in subjects such as language, literature, Caribbean history, economics, sociology, government, painting, drama, music, public administration, agriculture, social work, citizenship and international affairs.

Publications of the Department include *Caribbean Quarterly*, a journal devoted to matters of general Caribbean interest; "Caribbean Affairs", a series of occasional pamphlets or articles of Caribbean interest, "Public Affairs in Jamaica", and "Caribbean Plays", written by playwrights resident in the West Indies.

An Institute of Social and Economic Research was established at Mona in Jamaica simultaneously with the founding of the University College. It was later incorporated into the Faculty of Social Sciences when this was formed.

The Institute, under a director, is mainly concerned with applied research and social questions affecting the Caribbean area. It publishes quarterly *Social and Economic Studies*, which has acquired a considerable reputation among sociologists and economists; contributors to this publication are not confined to members of the Institute nor indeed to persons resident in the West Indies.

A branch of the Institute has recently been established in the Eastern Caribbean under a grant from the Ford Foundation. It is situated in Barbados with the Deputy Director of the I.S.E.R. as its head. It is concentrating on economic studies needed for development plans of the islands in that area.

The Teaching Hospital of the University is situated at Mona on the same square mile as the buildings of the University. It was set up under the laws of Jamaica, and is administered by a Board of Management consisting of representatives of the University, nominees of three governments in the Caribbean, of the British Medical

(*Continued on page 117*)



NEW RALLYING-POINT FOR OVERSEAS STUDENTS

A swirl of differing values enriches one Canadian life

JOANNE GARNER

IN MY FIRST YEAR at University of Toronto, I started going to the old house on Willcocks street which was headquarters of FROS (Friendly Relations with Overseas Students) and later the International Student Centre.

My high school girl friend was in the School of Architecture, a 20-minute walk across the campus from my college, and the easiest place for us to meet at lunch was that grubby little house. I kept going because I found I liked the other people who went there.

Although my family had never been particularly internationally minded, they had usually been free from prejudice, and my father and I shared an interest in Canadian political affairs. I found my interest in history and in current events deepening as I met and questioned people who actually lived in far-off countries. At Hallowe'en I volunteered to supply a cake for party refreshments. At Christmas I shared in the "Hanging of the Greens". That first Christmas also gave me the experience of tobogganing with someone

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Miss Garner is in her graduating year in the honour course in history at Victoria College. Her home is in Toronto



THE BEGINNING OF A NEW LIFE FOR BALDWIN HOUSE as the University's International Student Centre developed into the festive highlight of the academic year. Rotary District 707 was well represented among the honoured guests, for this group of clubs raised more than $200,000 for restoration of the landmark that was built in 1860 by Frederic William Cumberland and served for a time as the residence for Lieutenant-Governors of Ontario. It was also an event of much satisfaction for graduates and former students who contribute to the Varsity Fund: grants from the Fund supported Mrs. Kay Riddell, Director of the Centre, during the several years she spent as the University's Overseas Student Adviser.

Above, with a plaque that will remind this and future generations of students that Rotary pays more than lip service to the promotion of international understanding and goodwill, are Dr. G. David Scott, who is associate chairman, department of physics, and chairman of the Centre's Advisory Board, and Arthur Kingsnorth, Rotary's secretary-treasurer for the project.

Above: With the visitors' book at opening of International Student Centre are Brian Newey of Mimico-New Toronto Rotary Club, Fred Forster, Lennox Borel, Mrs. Forster and Mrs. Newey. Mr. Forster was chairman of the Metro Rotary Council which first sponsored dinners in private homes for students from outside Canada. His son, Donald, is executive assistant to President Claude Bissell. Mr. Borel is a graduate student from Trinidad.

Below: The students' steel band attracted such a crush to Cumberland Hall, once the Baldwin House ballroom, that dancers moved to the basement "cave".





Right: Miss Barbara Smith of the I.S.C. staff with Victor Bampoe, Ghana, who is studying bacteriology in the School of Hygiene, and Babir Chawla of India, electrical engineering

who had never seen snow before, and finding out about the Christmas customs of tropical countries.

I felt at ease in FROS and had no concern over initiating conversations, although I often froze in strange groups at other campus meeting spots. In my second year I was elected to the student committee and really became actively involved in FROS affairs.

Chairmanship of a series of discussions on world religions put me in contact with professors from all over the campus. Friendship with an Indian graduate student led me to dinner at Massey College, to participation in the Indian Republic Night celebration, and a walk-on part in a play dealing with cultural barriers and conflicts. I gained more friends, and broadened my intellectual horizons.

I expressed some of my Canadian nationalism by showing new people around Toronto, by taking a group through the Ontario Legislature, by going to the Stratford Festival, joining a tour of Ontario farms, and being the hostess at a Dominion Day party.

At the same time I learned something of what it means to be a West Indian whose island has just gained its independence, to be a Ceylonese celebrating his national day, and a black Rhodesian who knows that return to his country means certain imprisonment and possible death. I have cringed as a black man criticised my country's restrictive immigration policies and discriminating housing practices. There have been no-holds-barred discussions on race. The Selma marches and Stokely Carmichael's Black Power policies have been made more real to me by people who know what it means to be turned away because of their colour.

In the autumns I have been chairman of the U of T overseas student reception service and a CSOST representative at Malton airport. Through these I have tried to develop a real assistance program for students in their first days at the University.

Growing up always brings the pains



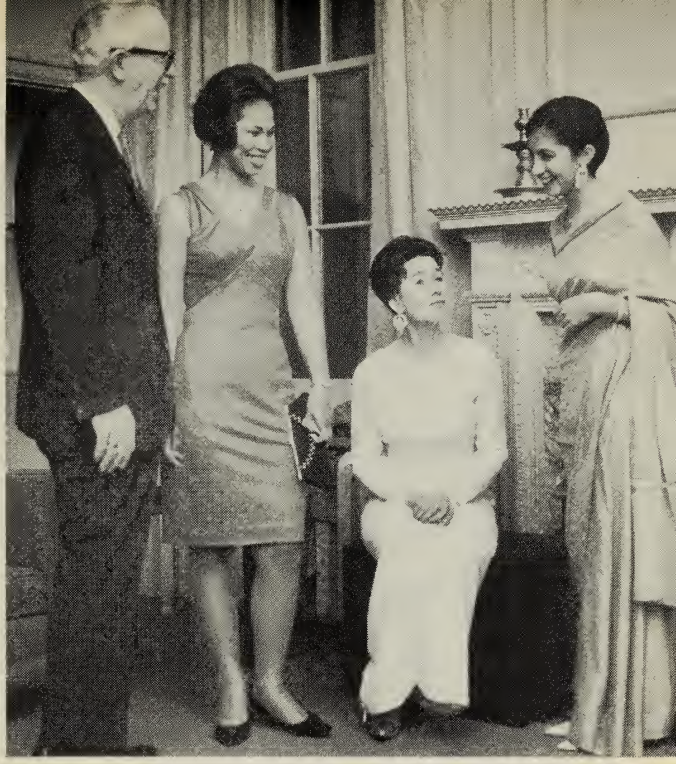


For Mrs. Kay Riddell, at extreme right of the central photograph, the opening of the new centre was a peak in a career that has included some years as the wife of a career-diplomat. She came to the University as Overseas Student Adviser, is now Director of the I.S.C. *Above, left:* between dances in the "cave" are Waheed Ahmad, Pakistan, and his partner, Miss Teresita Nolasco, the Philippines, who are graduate

of self-discovery and perhaps this is more difficult when one is involved with people of very much different backgrounds and values. I have often been too active in extra-curricular affairs to give proper time to my studies, but then they have led me to take courses in Islamic and Indian history which I otherwise would not have taken. Tasting lightly from many avenues of activity precludes deep involvement in any one and leads to charges of insincerity in attitudes and relations with people. Family conflicts may develop from what parents imagine to be time-wasting occupations, even while they welcome one's new friends and realize all that one has gained.

I attended high school in Toronto and arrived at the University knowing a fair number of people on the campus, all of them commuters like myself. Taking part in International Student Centre activities has meant that, to some extent, I have been cut off from





students in geology and political economy; Miss Sandra Wheaton and Gary Teeple, both in sociology, and Miss Velda Williams from Barbados.

Above, right: J. A. Turner with Miss June Robinson, Trinidad, Mrs. Turner and Miss Naelifer Kuraishi, who is in the honour science course at Innis College. Mr. Turner is Chairman of Rotary's International Centre project.

meeting many Canadian friends. At the same time I have been among people who share my interests and I have taken part in more campus-centred activities than most student commuters do. I have also met students from all courses and all years, which would not have been possible if my friends had been only Canadians from my arts college. I was secretly pleased when, as a freshman, I found that my friends included fourth-year students, and even graduate students and instructors who came often to I.S.C. My contacts with professors through arranging discussions and at student-professor teas at the Centre broadened my vision of the "Community of Scholars".

There is a lot to remember: the birthday party of an Indian child, at which I was the only Canadian; a Chinese wedding reception, a Trinidadian and an Indian discussing cricket (a game they both love), fantastic calypsos, a West Indian party



Left: Three young women from the Philippines — The Misses Letita Gan, Carmelita Jugo and Monette Ebro — in the Baldwin House stairwell

ending in a wild, mad "jump-up", the opening of the Centre in an historic century-old mansion.

I have a happy memory of the bus trip back from a conference held for Asians, Africans and West Indians of Commonwealth background. One of the party began to sing "Rule Britannia" and they all joined in, since they had learned the song in colonial schools. Suddenly they stopped singing and looked at each other, embarrassed at thus acknowledging this colonial tie, yet aware that this was something they all had in common, despite differences of language, race and religion.

At the end, I remember the sadness of saying good-bye to a friend one is never likely to see again, and doing this several times each year. My future is uncertain. I will be teaching next year in a rural northern Ontario high school, far removed from the international atmosphere I have known. After that, perhaps CUSO to gain a real cultural and international knowledge to add to my rather vicarious experiences. Certainly I will travel, at least to some of the places where my friends will be after they leave Canada.

* * *

Miss Joanne Garner, author of the foregoing, is one of many Canadian undergraduates who are helping to make the International Student Centre a unique University asset.

Noon is usually the busiest period. Documentary films may be shown. There may be French conversation, Spanish conversation, recorded classical music, or a lecture on anything from French Canada to law or human rights. Usually, somewhere in the House, someone is singing — often to the accompaniment of a guitar (bought at half price).

In the basement, West Indians may be rehearsing their steel band while others with energy to burn play table tennis.

A change of pace comes when the Overseas Students Wives Club meets. (There are about a hundred married couples from abroad.) The wives bring the children with them. But once a month they break away for an outing away from the Centre while the husbands take over as baby-sitters.



INTERNATIONAL BANQUET

There have been sumptuous feasts in Baldwin House — but few could have had the variety of the dinner last Christmas: Indian curries, spicy West African stews, a bland vegetarian dish favoured by Buddhist monks in China.

Above: Miss Lourdes Sumagaysay and Mrs. Lucila Tibigar serve up a dish favoured in Manila: rice noodles with meat, vegetables.

Right: A student member of the Centre's board, Miss Joanne Garner, took time out for nourishment with Dan Eyima of Nigeria and Arvind Narale, India — and then returned to her personal project: Scandinavian cookies from her grandmother's recipe.





A CANADIAN FINALE TO A GOOD PARTY

When the gong sounded, cooks and their fellow students had many tempting platters to choose from. And afterwards, as a salute to the pioneers of the host nation, some of them popped corn at open fires.

Right: In this group are Miss Susan Riddell of the University Library, daughter of the Centre's director, with Kweku Ghartey of Ghana (he's a Med), Andrew Shum, Hong Kong (Pharmacology), and another Ghanaian, Julius Mingle (bacteriology).





THE CHANCELLOR AND THE PRESIDENT IN WINNERS' CIRCLE

A continental accolade for U of T scholarship

UNIVERSITY OF TORONTO won 26 Woodrow Wilson fellowships this year to rank fourth on the continent, one behind Cornell. Harvard was the leader with 42 and Michigan had 29. Hundreds of universities and colleges in Canada and the United States put up candidates for the awards which are accepted as a North American yardstick of academic excellence.

The fellowships, made possible by Ford Foundation grants, cover the cost of a year's graduate work plus a living stipend of $2000 and allowances for dependent children. They are intended to stimulate the flow of university teachers.

Nineteen other Canadian universities won 54 awards, UBC and McGill, each with eight, tied for second in Canada. *Continued*

Woodrow Wilson Fellows

The formal photograph at right was taken after Dr. Omond Solandt, the Chancellor, and Dr. Claude Bissell, the President, had presented the letters of award. As indicated, New College had a winner this year, along with those from Trinity (T), University College (UC), Victoria (V), and St. Michael's (St.M.) Students with asterisks beside their names live in Metropolitan Toronto.



Front row

*Douglas H. Arrell (T)
*Robert J. Barringer (St.M.)
The Chancellor, the President
*Mitchell R. Bornstein (U.C.)
*Susan K. Corben (T)

Middle row

*David A. Crerar (V)
John D. Cuddy, Whitby (T)
Mark M. Czarnecki, Princeton, N.J. (V)
*Gurston L. Dacks (U.C.)
*Gail R. Eason (U.C.)
Nancy J. F. Evans, Orillia (T)
*Frances A. Gooday (T)
*Ted R. Greenwood (New)
*John M. Haiman (U.C.)
Charles D. Hay, Alliston (U.C.)

Back row

Joel J. Ien, Port of Spain, Trinidad (U.C.)
James W. King, Springfield, Mass. (St.M.)
Malcolm D. Knight, Amherstburg (T)
*Mrs. Sirpa A. Kuzyk (V)
*Maureen L. MacGrogan (V)
*Margaret A. Mackay (U.C.)
Karal Ann R. Marling, Rochester (St.M.)
Judith A. McMacken, Iroquois Falls (V)
James E. Neufeld, Waterloo (T)
*Mrs. Genevieve D. Vikar (U.C.)
*John A. Wilkins (T)



Toronto graduates and professors help the United Nations Educational Scientific and Cultural Organization to mobilise Earth's intellectual resources for the benefit of all mankind

UNESCO: *The Vision and the Remarkable Reality*

UNESCO has been irreverently called the egg-heads' arm of the United Nations Organization. It is designed to further international co-operation in education, science, the social and human sciences and communications. The very breadth and scope of UNESCO's concerns, to say nothing of the charming but slightly scatter-brained quality that characterizes certain of the world's intellectuals and educators particularly in international conclave, gives to the organization an agreeable humaneness and colourfulness (and, to its critics, an air of fecklessness) that is altogether absent in such sober sister UN organizations as the International Labour Office, and the World Health Organization.

Canada as a member of the UN is a member of UNESCO. Canada is, indeed, among its largest subscribers because of the proportional system of payments by which the UN is financed and to which Canada is committed. A majority of the one hundred and twenty member states, some sixty-four states in all, contribute a total of 2.75% of the total budget. The U.S.A. pays 29.94%. Canada's contribution is 2.97%.

Professor Tuzo Wilson and Professor W. A. C. H. Dobson have been members of the Canadian Delegation for the 12th, 13th and 14th Conferences. They were held at UNESCO's headquarters in Paris. There is a little of the air of a University of Toronto reunion on these occasions, for besides our two professors, there have been the Hon. William G. Davis (1951) and David W. Bartlett (1948) on the delegation while the diplomatic members have included such alumni as Saul Rae (1936), Hamilton Southam (1939) and Donald Munro (1946). University of Toronto graduates appear with surprising frequency among other delegations. This year our graduates were spotted in the Ethiopian, Chinese and Brazilian delegations. Some delegations are quite large, that of France, seventy-one,



Professor W. A. C. H. Dobson and Professor J. Tuzo Wilson outside UNESCO headquarters in Paris

those of the U.S.A. and U.S.S.R. in the region of twenty-five, while, at the other extreme, the Upper Volta delegation consisted this year of one member. Canada's delegation usually numbers about twelve.

The Conference divides into Commissions and reassembles in Plenary. Broadly speaking, UNESCO's activities are examined and discussed in the Programme Commission which itself divides into two sub-commissions that run concurrently. (The Upper Volta delegation had a problem here this year). Legal questions are referred to the Legal Commission and administrative matters to the Administrative Commission. The Commissions report back to the General Conference in Plenary — but meanwhile the Conference convenes as a whole to debate broader questions, such as the perennial one of seating China and this year, the problem of Portugal. Procedures follow the pattern of the UN General Assembly in New York, so

that, for example, matters of detail in UNESCO's program are not debated in the way to which scholars are accustomed, but are the subject of prepared statements accompanied by draft resolutions to which amendments are presented and voted upon. As these debates are conducted in English, French, Russian and Spanish (and this year a decision was made to add Arabic) translation is provided by some of the world's most skilled simultaneous interpreters. Documentation — on a scale that would shake the most harassed academic administrator — is also produced in all four languages. A delegate has some thirty or forty background papers and complicated resolutions to digest each day: as the Conference lasts five weeks an understandable indigestion, that no amount of Parisian cooking can mitigate, results. The debate calls for skill in parliamentary manoeuvre as well as expertise in the subject matter under discussion. Occasionally procedure becomes so involved that delegations get confused; this year one Asian delegate confided to a friend that his instructions were to vote with the Canadian delegation if things got out of hand. This is a compliment to the trust and esteem in which Canada is held particularly among the smaller nations.

UNESCO began with a stirring declaration that "wars begin in the minds of men" and it is in the sphere of the mind that UNESCO seeks to mobilise the world's intellectual resources to cope with the world's problems. With

(Continued on page 116)

BELOW: UNESCO DELEGATES HON. WILLIAM DAVIS, MINISTER OF UNIVERSITY AFFAIRS; PRESIDENT HENRY HICKS OF DALHOUSIE UNIVERSITY; PROFESSOR DOBSON





MRS. STEWART MRS. CASEY MR. MILLS

When good athletes get together . . . they get married

REUNIONS of T-Holders had been held before. Mrs. Richard Lyall Wright (Margaret Stock, Class of '43) organized a women's club in 1948. Last autumn Joe Evans, Director of Alumni Affairs, was the key promoter of a dinner that led to a men's association and the election of Murray Wilton as the foundaing president.

But it took Thora McIlroy, who was captain and goalie of her hockey team before she became Mrs. Ralph S. Mills, to put T and T together. When her list of T-Holders who had married T-Holders reached a total of nine couples, Mrs. Mills showed it to Joe Evans — who showed it to the Chancellor — who uttered one of his magical Latin phrases, and presto! — there they all were at the Faculty Club having a ball.

Films showing last year's hockey and football Blues in action came in for critical attention. The room buzzed with good talk, the speakers interrupting themselves as memories kept crowding in. Honourable scars were conversation pieces. "Bobbie Rosenfeld gave me this," said Mrs. Mills, fingering a fine white line on her chin.

The most remarkable aspects of this remarkable gathering, however, did not exist. As the photographs on this and subsequent pages reveal, there wasn't a paunch or a second chin in the house.

In the photograph at the top of the page are Mrs. William R. Stewart (Eleanor Sedwick) who won her T for basketball; Mrs. John W. Casey (Judith Smith), also basketball; and Ralph S. Mills. Mr. Mills, whose game was football, is the Chairman of the Board of Regents, Victoria University.

Above: Richard V. Howson, hockey; Mrs. P. Douglas Lougheed (Margaret Ann Merritt), basketball; Mrs. Gilbert Nunns (Beatrice Symons), tennis, swimming, basketball; Mrs. C. Peter Vernon (Gwen Anne Miller), badminton; Dr. Vernon, hockey. *Below*: There were no tests of speed, stamina and will-to-win at the Chancellor's party — but Bob Lansdale, who took the photographs, insisted on at least one picture with an athletic connotation. The "contestants" — with a spread of 33 years between their graduations — are William B. Kennedy, hockey, and Gilbert Nunns, tennis. The referee: Mrs. R. V. Howson (Alma Hatch), basketball.



Right: Sydney Hermant and his wife (Madge Shaw) won their T's for tennis



Below: Mrs. William B. Kennedy (Marjorie Jean MacDonald), hockey and archery; and P. Douglas Lougheed, football



Above: Hockey players all were John W. Casey (a football Blue as well); Mrs. Ralph S. Mills (Thora McIlroy); and William R. Stewart.
Below: As T-assistants, Mrs. Solandt and the Chancellor (he won his "T" for football) invited Joe Evans, lacrosse, director of Alumni Affairs, left; and Murray Wilton, boxing, president of the Men's T-Holders Association.



EXPLORATIONS

EXPLORATIONS

CONTENTS

Editor: MARSHALL MCLUHAN

Predicting Scientific Prediction BARRINGTON NEVITT

The cost of printing this issue of *Explorations* is being contributed by the Associates of the University of Toronto, Inc., New York, on behalf of the University of Toronto alumni living in the United States.

PREDICTING SCIENTIFIC PREDICTION

Definitions reflecting, or imposed upon, science The Oxford English Dictionary gives some generally accepted definitions for "science" and says in part:

Systematic and formulated knowledge (moral, political, natural, etc.) . . . organized body of knowledge that has been accumulated on a subject . . . exact science, *admitting of quantitative treatment*; pure science, *one depending on deductions from self-evident truths, or mathematics, logic;* natural, physical science, *one dealing with material phenomena and based mainly on observation, experiment, and induction, as chemistry, biology . . .*

However, scientists are continually redefining "science" through what they are actually doing every day. Charles Singer tells us that:

History has repeatedly shown that a body of scientific knowledge that ceases to develop soon ceases to be science at all. The science of one age often becomes the nonsense of the next . . . Science, then, is no static body of knowledge but rather an active process *that can be followed through the ages . . . By derivation* scientific *implies* knowledge making, *and no body of doctrine which is not* growing, *which is not actually* in the making, *can long retain the attributes of science.*

Charles Singer, *A Short History of Scientific Ideas to 1900* (Oxford, Clarendon Press, 1959), p. 1, and p. 2.

Let us therefore concede that science is an active, continuing, knowledge-making, and knowledge-testing process. No static definition can reflect its dynamic actuality.

Aims of scientists, past and present What was Newton's chief goal in 1687? *Absolute mechanical determinism*, or as he says:

I wish I could derive all phenomena of nature, by some kind of reasoning from mechanical principles.

Singer, *A Short History . . .*, p. 1.

In 1814 Laplace also clearly expressed this ideal in his oft-quoted statement:

We ought then to regard the present state of the universe as the effect of its anterior state and as the cause of the one which is to follow. Given for one instant an intelligence which could comprehend all the forces by which nature is animated and the respective situation of the beings who compose it — an intelligence sufficiently vast to submit these data to analysis — it would embrace in the same formula the

movements of the greatest bodies of the universe and those of the lightest atom; for it, nothing would be uncertain and the future, as the past, would be present to its eyes.

Marquis de Laplace, *A Philosophical Essay on Probabilities* (New York, Dover, 1952), p. 4.

Most leading scientists of the mid-twentieth century, however, no longer consciously defend this position. For example, P. A. M. Dirac believes that:

. . . nature works on a different plan. Her fundamental laws do not govern the world as it appears in our mental picture in any very direct way, but instead they control a substratum of which we cannot form a mental picture without introducing irrelevancies.

P. A. M. Dirac, *The Principles of Quantum Mechanics* (Oxford, Clarendon Press, 1958), preface.

Moreover, Dirac continues:

. . . the main object of physical science is not the provision of pictures, but is the formulation of laws governing phenomena and the application of these laws to the discovery of new phenomena. If a picture exists so much the better . . . One may, however, extend the meaning of the word "picture" to include any way of looking at the fundamental laws which makes their self-consistency obvious.

Dirac, *The Principles . . .*, p. 10.

The chief barriers to advance in today's physical sciences are, therefore, no longer due to conscious acceptance of Newtonian and Laplacian goals. Nonetheless, physical scientists have yet to find satisfactory theoretical models, not only to ensure freedom from the unconscious bias of mechanical determinism, but more particularly to prevent other hidden biases from obstructing exploration and discovery.

Laws governing, or derived from nature In discussing philosophical assumptions underlying physical sciences, Milič Čapek remarks that:

. . . the closest connection between strict determination and the corpuscular-kinetic model of nature can be seen from the very form in which the deterministic belief was stated given a state of the universe at a given instant . . . all the states of the cosmic history, whether past or future, are completely and unambiguously determined.
Not a single constituent concept of this Laplacian model of the universe remains unaffected; what has been left intact by the relativity theory was challenged by the theory of quanta or wave mechanics. Relativistically speaking, there is no such thing as a state of the world at an instant; there is no such thing as an instantaneous configuration of particles. Moreover, the concept of immutable and permanent particle, identifiable through space and time, is as obsolete as the concept of durationless instant.

Milič Čapek, *Philosophical Impact of Contemporary Physics* (New York, Van Nostrand, 1964), p. 392.

Models can thus obscure the "laws of nature" and impose their own "laws" instead.

Čapek goes on to show that purely visual representations of physical phenomena have so far proved inadequate, and to suggest that:

. . . in the temporal structure of the perception of melody, features can be discovered which appear irrational in any visual-mechanical model of physical reality; the primacy of events, the absence of infinite divisibility, the compatability of continuity and individuality, the fusion of becoming with its concrete content . . . such use of auditory models . . . helps to free our mind from the exclusive sway of visual imagination . . .

Čapek, *Philosophical Impact . . .*, p. 399.

From the above we discern a trend away from rigid, visual-mechanical models towards non-mechanical, other than visual, representations. By continually striving to become aware of their limitations, scientists may be helped, rather than hindered, by the models they create. Identifying ignorance and recognizing necessity are the first steps toward fresh knowledge and to new freedom.

Against the *absolute governance* of laws imposed upon nature by Newton and his successors, other scientists now oppose attempts at *purely objective* description of natural phenomena. By pushing this tendency still further there are many who contend that, so far as science is concerned, "What cannot be measured does not exist", and there are those who insist besides that, "Science has already superseded philosophy".

Nevertheless, both the observer and the observed are interdependent systems, themselves interacting with other perceived and unperceived, measurable and immeasurable, systems of changing systems (often assumed to be closed, for convenience, but always actually open) which together constitute nature. Moreover, even the denial of a role for philosophy itself hides a philosophy. Scientists may thus become not only "blind" philosophers but also "blind" scientists by remaining unaware of the philosophical assumptions lurking in the rules of "normal scientific" procedure, which determine the acceptability of scientific work among professional scientists.

Unperceived environments retarding scientific discovery Scientists, like all of us, are immersed in, and are unconsciously influenced by, the total environment in which they live. Marshall McLuhan continually stresses:

. . . the imperceptibility of the environment as such . . . The pervasive structure, the overall pattern eludes perception except in so far as there is an anti-environment or counter-situation constructed to provide a means to direct attention . . . Any new technology, any extension or amplification of human faculties when given material embodiment, tends to create a new environment . . . Our typical response to a disrupting new technology is to recreate the old environment instead of heeding the new opportunities of the new environment. Failure to notice the new opportunities is also failure to understand the new powers. This means that we fail to develop the necessary controls or anti-environments for the new environment. This failure leaves us in the role of automata merely.

Marshall McLuhan, unpublished lecture notes.

Confronting every scientist, therefore, are problems of becoming aware of, and making allowances for, the effects of his total environment: the biases of his own sensory perceptions, including their technological extensions, as well as the assumptions underlying his scientific theories and methodology. Through conscious awareness of their limitations he can learn to use their potentialities. Moreover, by continually making inventories of the effects of any process upon all observable environments — both "inside" and "outside" his particular discipline — he can learn to accelerate his discoveries; he can also learn by "organizing his ignorance" to make every "breakdown" lead to a "breakthrough"!

In this regard, however, Thomas S. Kuhn contends that progress in science occurs largely in spite of, rather than because of, *normal science*; this, he claims, is concerned only with:

. . . research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice.

Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago, University of Chicago Press, 1962), p. 10.

Using the term "paradigm" to describe,

. . . universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners.

Kuhn, *The Structure . . .*, preface.

Kuhn goes on to show that:

Men whose research is based on shared paradigms are committed to the same rules and standards for scientific practice. That commitment and the apparent concensus it produces are prerequisites for normal science, i.e. for the genesis and continuation of a particular research tradition . . . . . Mopping-up operations are what engage most scientists throughout their careers . . . to force nature into the preformed and relatively inflexible box that the paradigm supplies. No part of the aim of normal science is to call new sorts of phenomenon . . . . . .

Kuhn, *The Structure . . .*, p. 11, and p. 24.

In such a cultural environment scientists unconsciously acquire a criterion for choosing problems that they can assume to have solutions, while taking the paradigm for granted. Problems not covered by the paradigm are then rejected as "metaphysical", or as the concern of other disciplines. Kuhn further points out that:

One of the reasons why normal science seems to progress so rapidly is that its practitioners concentrate on problems that only their own lack of ingenuity should keep them from solving.

Kuhn, *The Structure . . .*, p. 37.

Kuhn then shows that:

Discovery commences with the awareness of anomaly, i.e. with the recognition that nature has somehow violated the paradigm-induced expectations that govern normal science . . . until the scientist has learned to see nature in a different way, the new fact is not quite a scientific fact at all!

Kuhn, *The Structure . . .*, pp. 52, 53.

Thus novelty emerges only with difficulty in opposition to an environment created by normal science, which is the professional concern of normal scientists having normal expectations.

Scientific prediction, quantitative or qualitative We have already achieved considerable success in making scientific predictions by analytical methods, based on arithmetic, mathematical models, and formal logic. We shall now refer to them collectively as *quantitative forecasting* — both extrapolating and interpolating from accepted premises — interpreted and seasoned by human judgment. Where does quantitative forecasting fail?

We cannot adequately describe our actual world of endless subtlety and inexhaustible variety in terms of *absolutely separate factors* undergoing *purely quantitative changes*, as in mathematical models; nor can we reliably foresee and effectively direct the rapidly changing trends of its development through *YES-OR-NO thinking* alone. Today, most of us are also aware of the dangers lurking in quantitative extrapolations beyond what is currently known — no matter how sophisticated our computers may be!

Recently, J. Bronowski expressed our dilemma thus:

A. M. Turing in England and Alonzo Church in America showed that no mechanical procedure can be devised which could test every assertion in a logical system and in a finite number of steps demonstrate it to be either true or false. This is Hilbert's Entscheidungsproblem *in its direct form. In a sense, Gödel's result is deeper than this; and Alfred Tarski in Poland . . . showed that there can be no precise language which is universal; every formal language which is at least as rich as arithmetic contains meaningful sentences that cannot be asserted to be either true or false. . . . . The laws of nature cannot be formulated as an active, deductive, formal and unambiguous system which is also complete. . . . The decision to take new matter into our systems . . . is an imaginative step . . . it is alike in science and literature.*

J. Bronowski, *American Scientist* 54 (Spring 1966), pp. 4, 5, 12, and 13.

Quantitative predictions from known assumptions are restricted by their very nature to defined *properties* — *factors* attributed to defined *things* — in defined *relationships*. Such predictions can therefore tell us nothing about new characteristics and new patterns of behaviour that emerge in evolutionary processes.

We therefore clearly need a technique of prediction that will help us not only to identify but also to allow for the creation of novelty, for growth or decay, for both continuity and discontinuity, and for both *combination* and

separation, as they actually occur in nature. Such a technique, that we shall now call *qualitative forecasting*, owes its origin to those Greek philosophers who claim that, "Nothing is inevitable but change!" Qualitative forecasting indicates possible trends of development, where certainty is either unattainable or unnecessary; it breaks through the fundamental limitations of quantitative forecasting; and it enables us to make predictions, or constructive speculations beyond formal logic and beyond mathematics — basic tools of science — which are imprisoned in YES-OR-NO thinking.

YES-OR-NO thinking: logic or life Aristotle of Stagira and his disciples based their analytical thinking upon the ultimate abstraction — *pure being* — to which they attributed various carefully defined *properties*, in order to describe separate *things* and distinctive *relations*, which they believed to constitute or to reflect the world. Starting from such assumptions they established rules for *rational thinking* — three axiomatic *Laws of Logic*:

- *Law of Identity* — Everything that is, is.
- *Law of Contradiction* — Everything either is or is not.
- *Law of the Excluded Middle* — Nothing can both be and not be.

We have inherited these modes of definition and laws of logic from Aristotle and have applied them effectively both in quantitative analysis and in mathematics.

However, the implications of these axioms go much deeper: they presuppose that "sufficiently precise" definition of "separate things" and their "specific relationships" would, *in principle*, enable complete description of all individual happenings, here and now. Moreover, "sufficiently complete" knowledge would allow prediction of all future happenings in other circumstances also. This is *YES-OR-NO thinking*.

Quantitative forecasting: extrapolating the known to nonsense For purely YES-OR-NO thinking, *quantitative growth* means increase through simple multiplication or addition. Similarly, quantitative decay means decrease through subtraction or fragmentation.

In the same spirit, *quantitative evolution*, implies the growth of "latent" characteristics from small- to large-scale versions of already created things — man from homunculus. This concept of development, pushed to the extreme, can extrapolate from the known to nonsense! It also suggests eternal repetition: "There is nothing new under the sun." Such is the pattern of evolution for purely quantitative growth devoid of qualitative changes.

This is the conceptal basis for purely quantitative analysis, for mathematical models, and for computer programs, into which we must inject qualitative judgments to determine their specific ranges of validity. Can we foresee the nature, and the timing, of these qualitative changes?

YES-AND-NO thinking: logic and life By treating Aristotle's laws of logical thought as absolute principles to which everything must conform, Zeno of Elea exposed their limitations in his famous paradox of an arrow in flight. Zeno

contended that, according to these axioms, the arrow must *either be or not be* where it is (Law of Contradiction). Since it *cannot both be and not be* where it is (Law of Excluded Middle) nor can it *be where it is not* (Reduction to Absurdity), it *must be where it is* (Law of Identity). Therefore, concluded Zeno, all motion is an illusion!

As Heraclitus of Ephesus realized, the Arrow Paradox results from assuming that motion — all dynamic natural phenomena — can be represented wholly in terms of YES-OR-NO choices between definable fixed states of "being". This fallacious assumption has been a prolific source of logical paradoxes and academic hair-splitting, as well as of errors in more practical matters. Heraclitus pointed out that:

You cannot step twice into the same *river, since fresh waters are ever flowing upon you.*

George Sarton, *A History of Science*
(Cambridge, Mass., Harvard University Press, 1959), p. 240, n. 6.

Heraclitus and his followers, therefore, sought to base their analytical thinking upon identifying various stages in processes of flowing or *becoming*, which they considered as the ultimate abstraction suitable to describe a changing world. Furthermore, by representing *everything as a process in some form of becoming*, conceived as *both being and not being* something — both "environment" and "anti-environment", the opposite sides of some actual process — Heraclitus rejected the Law of the Excluded Middle; he thus denied the axiomatic basis for YES-OR-NO logic and the possibility of maintaining absolute boundaries of any kind in our world. This is *YES-AND-NO thinking.*

NOTES TO FIGURE 1

1 An interaction process begins with its conflicting PRO and CON, which may reach temporary accommodation leading to ultimate decay, if either PRO or CON is suppressed, or which may achieve integration leading to further growth, if both PRO and CON are combined.
2 Whenever a fresh integration is created, another interaction process begins with its own possibilities of decay or growth.
3 The example, shown in brackets, illustrates how conflicting individual and corporate goals may reach temporary compromises by their relative suppression, or may attain ultimate integration through their combined development.

PRO-CON INTERACTION PROCESS
(Achieving Personal or/and Corporate Goals)

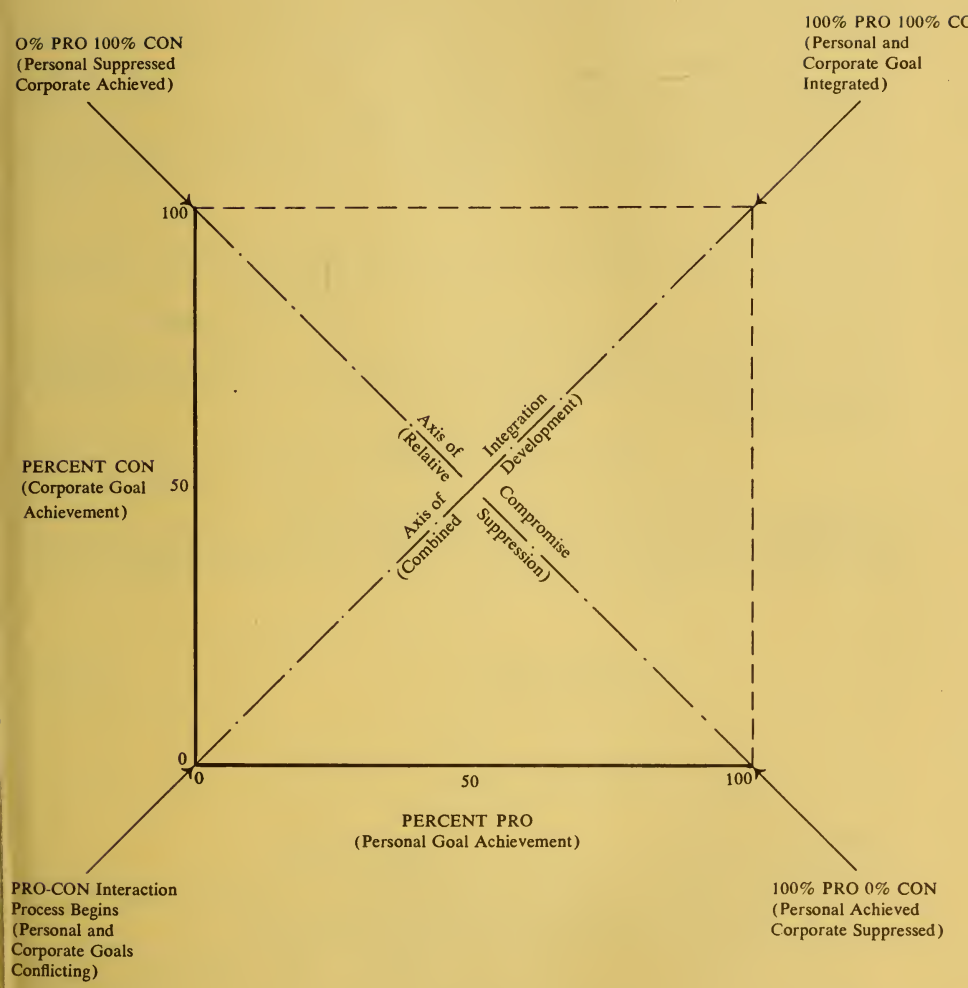


Figure 1

Constructive conflict leads to integration not compromise In practical negotiating we normally consider various tentative solutions, that offer more or less support for some proposal — PRO — at the expense of its counter-proposal — CON — in Figure 1. Such trade-offs constitute varying degrees of compromise. Neither contender is entirely satisfied. Problem-solving and decision making, however, are most fruitful when they succeed in combining opposite sides — both the PRO and the CON — into a fresh synthesis with new possibilities of further development. However, resolving problems in this fashion requires YES-AND-NO thinking, where neither side is suppressed, and both are combined into a fresh unity, that is qualitatively different and that creates something more than a mere conjunction of its opposites. In comparing integrated solutions with compromises, pioneer management scientist Mary Parker Follett remarks:

Integration involves invention, and the clever thing is to recognize this, and not to let one's thinking stay within the boundaries of two alternatives which are mutually exclusive . . .
Compromise does not create, it deals with what already exists; integration creates something new . . .
Only integration really stabilizes. But by stabilization I do not mean anything stationary. Nothing ever stays put. I mean only that that particular conflict is settled and the next occurs on a higher level.

Mary Parker Follett in Henry C. Metcalf and L. Urwick, eds., *Dynamic Administration* (New York, Harper, 1940), pp. 33, and 35.

Centralization, decentralization, recentralization, and redecentralization Business enterprises usually start life, Figure 2, with their decision-making functions

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NOTES TO FIGURE 2

1 Quantitative increases in size of organization require qualitative changes in its structure for continuing growth. Qualitative evolution proceeds through increasingly complex integrations of opposites that characterize every process.
2 By correctly identifying the opposites controlling each stage of process development, qualitative forecasting can indicate their evolutionary trends. These determine the boundaries for valid quantitative projections, which deal with scales of magnitude and rates of change, between trend reversals.
3 A typical example, shown in brackets, is for the birth and growth of a business organized for profit. Optimum rates of integration are achieved by correctly forecasting and stimulating qualitative changes in the evolutionary process.

PATTERN OF QUALITATIVE EVOLUTION THROUGH SUCCESSIVE INTEGRATIONS

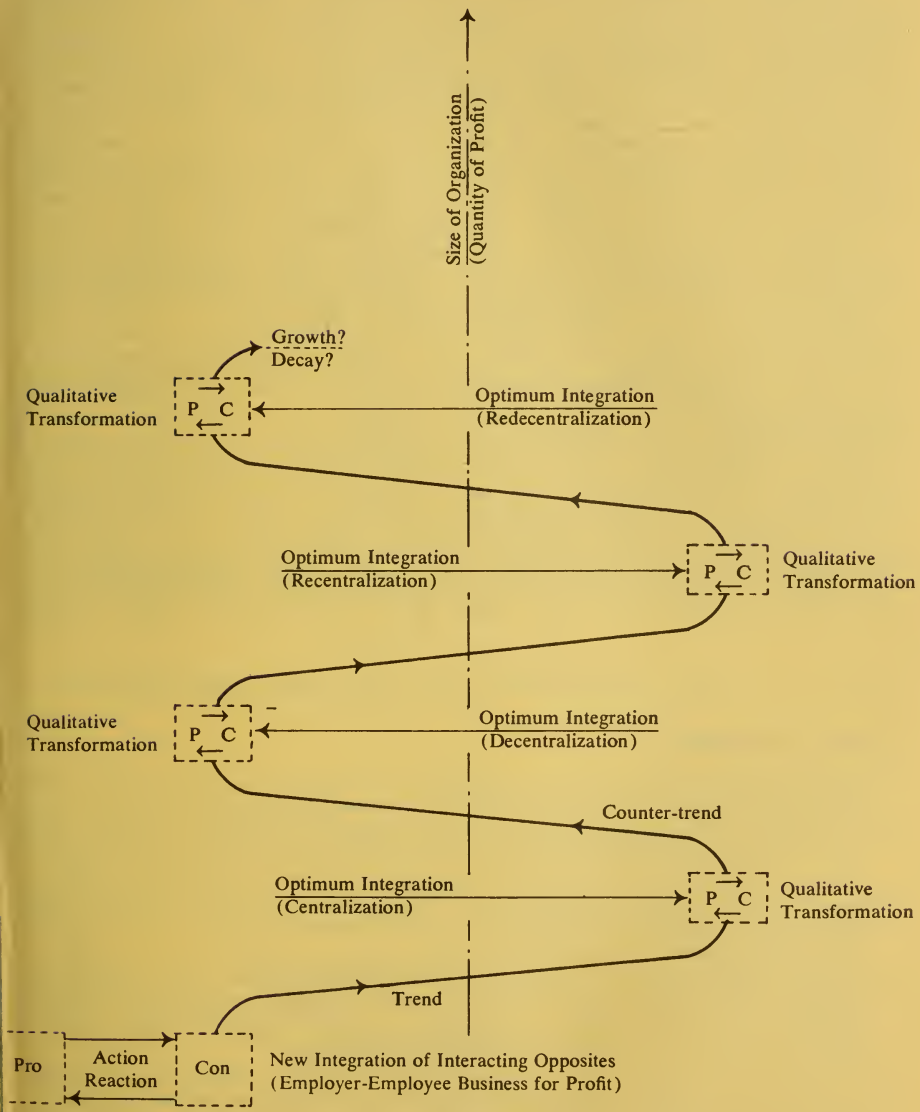


Figure 2

vested in a highly *centralized* authority — most often the owners. As business expands the pyramid of command tends to grow higher and higher.

Nevertheless, repeated experience proves that any large, highly centralized organization, as it continues to expand, will eventually encounter growing obstacles to implementing management policies; intensifying friction in personal relationships; diminishing scope for creativity; and an increasing need for ever greater numbers of still less effective employees. (See C. Northcote Parkinson, *Parkinson's Law* (Cambridge, Mass., Riverside Press, 1957).) Practical requirements for competitive survival will ultimately demand abandoning further attempts to build up centralized authority; remedial measures will then lead to growing decentralization, thereby contradicting previously cherished principles. (See Eugene J. Benge, *Advanced Management* (Oct. 1960), p. 4.)

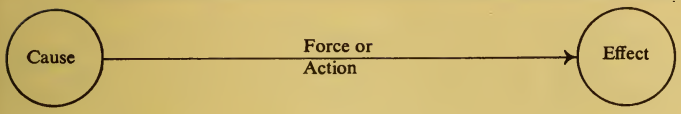
Nowhere has the tendency to decentralize been more evident than during the growth of international corporations. *Decentralization* has meant intensified delegation of authority to the "field" for day-to-day operations, leaving only major technical and financial, and broad policy matters for "home" office approval. It has also meant adding to the roster of central staff executives. Eventually, clashes of interest between organizational units will multiply to the stage where they inhibit further growth.

By ensuring *more rapid, direct communication* from centres of work to centres of information and direction, improvements in telecommunications, computers, business machines, and other technical devices, eventually permit the structuring of business organizations according to functions and markets, and according to competence and authority, in each operating unit. These fresh technological means provide the basis for a trend reversal toward *recentralization*, that is now apparent in some large organizations, which are both inverting

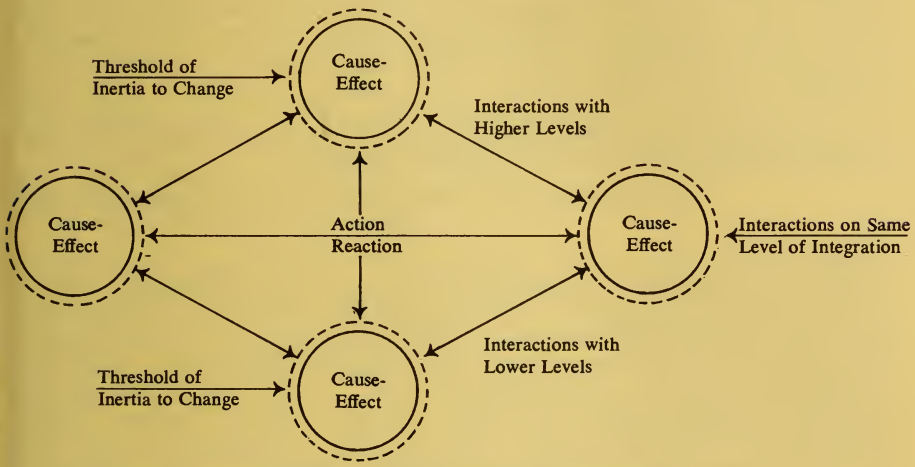
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NOTES TO FIGURE 3

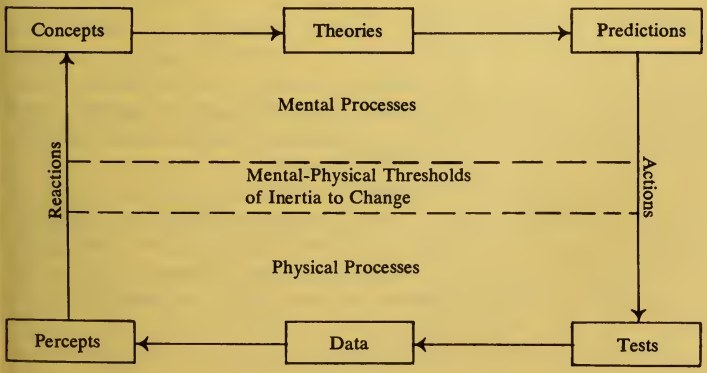
1 Yes-OR-No thinking implies the possibility of isolating absolutely separate individual causes from their particular effects at each level of organization.
2 Yes-AND-No thinking denies the possibility of absolutely isolating any cause from its effect, and implies not only their direct interaction with each other, but also with a network of interrelated cause-effect processes which may interact less directly.
3 Fresh qualities and new possibilities, for either growth or decay, result from both the changing intensities and the changing ratios of all interacting processes at all levels of organization in the network.
4 The interconnecting lines represent both, new and old, known and unknown but possible, interaction processes, which may be accelerated by juxtaposition and manifested as distinct qualities of behaviour perceived through varying combinations of human senses, with their technological extensions.
5 Concepts are abstracted from the percepts of experience, with their sensory biases in a particular cultural environment, and are continually generalized into "laws", thence into more general theories, which are retested to produce new data and fresh percepts in a never-ending process.



3.1 Single Cause of Single Effect through Single Action with no Interactions.



3.2 Multiple Causes of Multiple Effects through Multi-level Interactions.



3.3 Mental-Physical Interactions.

Figure 3

the structural pyramid and reducing its height, thereby contradicting "Parkinson's Laws!"

We can also now discern that such recentralization is generating other problems which, in their turn, will become more complex and more numerous as corporate activities extend through both vertical and horizontal combinations. We may therefore expect and prepare for eventual *redecentralization* (in more sophisticated form than previous decentralization), as a necessary condition for removing future obstacles to further expansion. If decay or catastrophe is averted, oscillations between centralizing and decentralizing tendencies are conceivable in a still more distant future, as communications improve and as systems of organization develop in scope and size to attain and surpass transnational scale — to the transplanetary and beyond! (See Donald P. Kircher, *Harvard Business Review* (March–April 1964), p. 6.) As Marshall McLuhan puts it:

An increase of power or speed in any kind of grouping or in any component whatever is itself a disruption that causes a change of organization.

Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York, McGraw-Hill, 1964), p. 90.

Qualitative forecasting: extending the known to reversal and beyond Figures 1 and 2 thus diagrammatically represent qualitative forecasting processes typified by the "management sciences"; with Figure 3 they focus attention on, and they anticipate the consequences of, dynamic interactions in multi-level evolutionary processes with particular regard to *qualitative transformations*, whether perceivable through our senses and their extensions, or only vaguely conceivable in our imaginations. These diagrams predispose us to note the qualitative distinctions in a hierarchy of dynamic physical, chemical, biological, and human organizations constituting our world; they allow for both simultaneous and sequential processes occurring in both separate and super-imposed spaces, perceived through both visual and audile-tactile sensory modes. They suggest dangers of analogy and over-simplification. There are no isolated things, no single causes of single effects. There are only interacting processes. The processes of physics cannot "explain" biology any more than either, or both, can "explain" the behaviour of individual people or their organizations, since these systems of systems, no matter how closely interlinked, are nonetheless open, continually interplaying, constantly changing, and qualitatively different from each other. Such differences are revealed in their distinctive characteristics and patterns of development.

Qualitative forecasting therefore tries to foresee the consequences of extending or intensifying a particular trend, either to ultimate decay or until its counter-trend emerges in a more complex and fresh integration — *qualitative evolution* creating a new environment — and it then attempts to assess the results of further trend-reversals at still higher levels of integration, to the bounds of growth conceivable.

By developing our skill in qualitative forecasting through exploring with it —

by pattern recognition — we shall enrich the "technique of discovery" and the "technique of suspended judgement" described by Marshall McLuhan:

The technique of discovery, namely, the technique of starting with the thing to be discovered and working back step by step, as on an assembly line, to the point at which it is necessary to start in order to reach the desired object. . . . In art . . . starting with the effect *and then inventing a poem, painting, or building that would have just this effect and no other. . . . The "technique of suspended judgement" goes further It anticipates the effect of, say, an unhappy childhood on an adult, and offsets the effect before it happens.*

McLuhan, *Understanding Media . . .*, p. 62.

Exploration means crossing boundaries — both mental and physical — for discovery; it implies juxtaposing the unlikely in order to create the unexpected; it requires interfacing the apparently disconnected to produce often surprising results; and it demands readiness to accept the unique event — the nonrepeatable instance of novelty — which does not fit existing categories of thought or patterns of experience. In this spirit we can also learn to predict the "unpredictable"!

Scientific predicting in future During recent years we have witnessed great progress in the techniques of quantitative forecasting, especially through the development and use of mathematical models and computers. This trend will accelerate; it will increasingly release human brains from the bondage of quantitative calculations, information retrieval, and logical analyses, that computers can do better. Scientists will thus become freer and freer to devote more and more of their time to exploration and discovery through conscious choice rather than unconsciously, or merely by accident! Men will provide the "information" for machines to "deliver the goods"! And "scientists" will become "artists" in Marshall McLuhan's sense that:

The artist is the man in any field, scientific or humanistic, who grasps the implications of his actions and of new knowledge in his own time. He is the man of integral awareness.

McLuhan, *Understanding Media . . .*, p. 65.

Scientific predicting in future will therefore demand growing awareness of what goes on both "inside" and "outside" scientists in their doing and thinking; it will require both quantitative and qualitative forecasting, both visual and audile-tactile models, both YES-OR-NO and YES-AND-NO patterns of thinking; it will explore the interfaces of all disciplines in order to cross their boundaries consciously in search of new knowledge; it will not only make still further use of abstract mathematical concepts but will also draw upon the rich store of artistic and literary metaphors and myths; it will engage in continually making and remaking inventories of everything that the processes studied are actually doing to their environments, in order to determine when trend reversals and fresh patterns of behaviour can or do occur, and how much

their outcome is controllable; it will make due allowances for the total effects, not only of the experimental methods and the measurement techniques employed but also of the communication media involved; and it will continually reorganize information both for rapid sequential retrieval — to match the old — and for simultaneous comparison — to discover the new. Nevertheless, scientific predicting will continue to be guided by human "imagination" and tempered by human "judgement", but with conscious involvement of the perceptions needed and with fore-knowledge of their effects. Old sensory modes will be extended and new ones will emerge to create higher levels of human consciousness and broader understanding. Predicting will more and more nearly anticipate the consequences of contemplative actions, while anticipation will evolve into human experience of new kinds — imaginary, privately experienced "present-futures" — converted into social reality through processes that more and more nearly approach total consent, through total understanding, by total communication.

Barrington Nevitt, *Consulting Engineer*



philosophers' walk

Claude Bissell

W. A. C. H. Dobson

Douglas LePan

Understanding China

W. A. C. H. Dobson

During the first half of the twentieth century the main focus in the grand strategy of world politics shifted from its epicentre — Western Europe, the seat of the Imperial Powers — to its periphery — the United States and the U.S.S.R. When the century began, a small group of Western European powers dominated the world stage, sharing, between them, most of the rest of the non-European world. But these Imperial Powers in two "world wars" involved the non-European world despite itself. One result was that Africa and Asia, dormant in the nineteenth century, took the occasion to press claims, hitherto hardly articulated, to assert their independence. The Imperial Powers lost their Empires. Another result was that, largely as a result of involvement in these wars, a sort of

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A note about the author: Professor W. A. C. H. Dobson, M.A., D.LITT., F.R.S.C., learned about China at first hand, first as a student and later as a staff officer in World War II. In 1947 he took up a Chinese Government scholarship at Christ Church, Oxford. There he was appointed Lecturer in Chinese and began work on *Late Archaic Chinese*, the first successful attempt at a Chinese grammar. This book came off the press in 1959, seven years after he had joined the University of Toronto staff as Professor of Chinese and Head of East Asiatic Studies. It has since been followed by his *Early Archaic Chinese* and *Late Han Chinese*. A fourth volume, *The Language of the Book of Songs*, is in the press. Relieved of administrative (but not teaching) duties two years ago, he hopes to continue his work until the entire history of the development of the language has been unravelled, and adequate grammars can be written for Modern Chinese. Recently, Oxford University encouraged this important scholarly effort by conferring on Professor Dobson its coveted degree of Doctor of Letters.

centrifugal movement set in, and the focus of world power passed from the centre to the periphery, to the United States in the west and to the Soviet Union in the east. The old national power politics now gave way to new power alignments of an ideological kind. The result of this was the cold war, the confrontation of democracy and Communism. Once again, not only were the leading contenders in the West — the Soviet Union and its satellites and the United States and its allies — involved, but, under the pressure of the economic forces at the disposal of these two giants, so too was the rest of the world, Africa and Asia.

In 1950 most observers thought that the stage was set for the rest of the twentieth century — a global confrontation, ideological in kind, between the two giants of the Western world, the Soviet Union and the United States — and that the problem for decades to come, short of war, would be the reaching of some accommodation or "co-existence" between the two worlds of Communism and democracy.

But in such calculations insufficient consideration had been given to the erstwhile pawns of Western power politics: the new republics of Africa, the ancient civilizations of Islam, the Hindu world, the Far East and above all China. In 1950 it was difficult to imagine that this oversight was significant. India with all its problems had just attained independence and had an appalling internecine war on its hands. Japan appeared acquiescent under American tutelage. The new republics of Africa were still only a promise. The Middle East was hopelessly faction-ridden. China, to most people's surprise and puzzlement, had just turned Communist. Many doubted that Communism would survive there.

The factor hardly considered then, but eloquently expounded by Jawaharlal Nehru and echoed in various keys by the rest of the Asian and African world, was the view that the

Cold War was a Western problem, the confrontation of Communism and Capitalism — a European neurosis — and that they, the non-Western world, would opt for non-alignment. They wanted nothing to do with the Western confrontation. Underlying this resolve, though little understood in the Western world, was the unpalatable fact that alignment in any form was a reversion to the state of the pre-1950s, tacit recognition of the dominance of the West one way or the other in world affairs.

In 1950 the West, in its pre-occupation with itself, took insufficient cognizance of the newly-awakened pride of Asia and Africa and so conceived of the world as divided into two camps, both Western-dominated, and set out to fight the battle with competing offers of aid. The shape of things to come for the rest of the century seemed still to be a long-drawn-out battle of enticement by the two Western world powers for the loyalty of Asia and Africa, for alignment one way or the other, in the ideological battle that was taking shape. To one aware of what was going on in Asia, however, a different possibility suggested itself. This was another shift of power alignment. The focus would shift to Asia. The ambitious young diplomat of the 1900s had his eyes on the embassies of London, Paris, Rome, Madrid, and Berlin. A similarly ambitious young man in the 1950s had his eyes on Moscow and Washington. Before the century ended, would he not be looking to Peking, to New Delhi, or to Tokyo? In 1950, one fact that seemed to argue against this was that China had just become Communist. No one at that time thought that this meant anything more than a victory for Moscow and for Communism and a tactical set-back in the prosecution of the Cold War. The United States, sixteen years later, is only just recovering from the fatal error of imagining that the Chinese are the pawns of Moscow, or satellites of the Russians, in their ideological battle with the West.

Even in 1950 the indications militated against this idea. Nehru was warning the West that India would not become Western democracy's satellite in Asia. The Chinese thought it hardly worth saying that they were not Russia's pawn. But because of Western pre-occupation with its own problems and struggles much policy at the time was, and still to some extent is, fashioned and inspired by such Cold War terms. To those who knew something of the depths, profundities, and non-Western orientation of Eastern civilizations, it seemed more probable that the century would see increasingly in the non-Western world a closing of the gap between these ancient civilizations and modern technology. Their immediate problem, seen very early by the Japanese and belatedly by the Chinese, was that backwardness in science and technology had led to the thraldom of Asia to Europe and that it was in science and technology, in becoming "modern" but not "Western", that their liberation lay. Once the technological gap had closed, national pride, deeply rooted

in long memories and ancient history, would reassert itself. Asia has no problem of its "identity". Its problem is that of contriving the conditions in which its identity can assert itself.

This shift of focus we are beginning to witness already, while the new half of the century is only sixteen years old. China has developed not as a loyal satellite of the Comintern in Moscow but as a major world power, distinguished not so much by its hostility to the democratic world, which is formidable enough, but by its hostility and irreconcilability with the European Communist world. The Chinese are already accusing the Russians of alliance with the Americans. It is not difficult to see why they imagine this. Recent diplomatic manoeuvres in Outer Mongolia, in Hanoi, and in Tashkent by the Russians, and the presence of the United States in Korea, Taiwan, and Vietnam appear to the Chinese to be part of a concerted whole to contain them.

It is beginning to come clear that in the long term the major area of concern is not imperial rivalry, not ideological divisions, but the widening gap between Western economic wealth and non-Western poverty; once that gap is reduced, however, the main challenge to the West will be to its intellectual and philosophical world-leadership. In all this, China is pioneering the non-Western world's new path. Perhaps the shape of things to come in the developing world, in the long term, is exemplified for us in the present history of China, not as a matter of the fate of the struggle between Communism and democracy (these two ideologies are themselves changing and moving towards reconciliation, as we see in Europe today); not as a matter of the outcome of the struggle between riches and poverty (China is showing the world that a poor country can, virtually unaided, raise itself by its own economic bootstraps); but as a challenge to the dominance in the world of Western civilization as we know it, because, once strong and assured, the civilizations of Asia will insist on their place in the sun.

The centrality of China both today and in the future on the world scene is hardly now in dispute. It is often said, though the fact is hard to assimilate, that China has one-fifth of the world's population. Its policies are at the moment the principal concern of the U.S.S.R. and of the United States. Despite this, it is the country that we in the West know least about.

Modern China comes most clearly into focus in the light of China's past. This may surprise some readers, but one of the consequences of our ignorance about China is that beliefs based on superficial observation are hardening into dogma. One such, firmly rooted in current thinking, is that the Chinese in 1949 went through some colossal repudiation of their past, ceased, in short, to be Chinese, and became rootless Communists overnight. And it is upon such dogmas that policy is being based. The thinking runs something like this: Marxists have no use for the past; the Chinese are Marxists; the Chinese have no use

for the past. At almost any level this argument is faulty. All peoples, Marxist or otherwise, are consciously or unconsciously the creatures of their past, and no peoples are so homogeneous, so bound by cultural ties, so united by a sense of their own essential uniqueness, as the Chinese. And this is no less true today than it was in the Classical Age two thousand years ago. Further, it is demonstrably untrue that modern China has even attempted to repudiate its past. Historical studies of all kinds have not flourished so much in any time of Chinese history as they do today in China. Chinese literature and culture are more assiduously cultivated today than in any other period of history. To imagine this not to be so is to discount the energies and the dynamism of Chinese nationalism that is propelling the Chinese to great feats of physical endurance in building the new China. Marxist theorists distinguish between Chinese Communism and the Communism of the U.S.S.R. The accent, it is becoming increasingly clear, is heavily upon the *Chinese* rather than the *Communist*.

A great many of the contemporary realities in Peking are as puzzling to an expert on Marxism, who argues from theoretical Marxist thought, as would be an explanation of current realities in Canada by a Tibetan who argues from a theoretical knowledge of Christian theology. Indeed it is a commonplace that Communist newsmen from Poland and Hungary in Peking seek out their democratic European counterparts for the comfort of common Western assumptions when confronted with some of the more puzzling manifestations of the Chinese mind.

This is not to deny that the present regime in China is Communist and Marxist. The Chinese leaders would be the first to insist that this is so. But a political and economic dogma such as Marxism, evolved in and based upon certain facts of Western sociological and economic behaviour, when grafted on to a society as different as that of the Chinese and expressed in a language as remote as is Chinese from Western languages, can produce some strange hybrids.

In speaking of ignorance of China, one has not so much in mind the paucity of information that we have on Communist China, since the world's press and eager visitors to China tell us a surprising amount. Far more significant is the almost total failure of our universities in the Western world to engage in those academic studies in depth that are a prelude to understanding, and which bring the information we have on China into focus. Many of the facts are not in dispute. It is in the interpretation of these facts, in the perspective in which we view them, that dangerous misapprehensions arise.

To a student of China's history, events since 1949 do not appear as a startling innovation, or as a complete *volte-face*; neither do they strike him as surprising or necessarily uncharacteristic. Change certainly took place, but no student of Chinese

thought could fail to see in Maoism certain recurring and familiar themes in Chinese philosophy. (It is one of the more peculiar follies of scholars in China to find echoes or justifications for Marxism in Chinese classical philosophers, a sort of zenophobic rejection of Russian claims to priorities of invention.)

One of the most dangerous illusions in all this is to imagine that we in the West, with our notions of individuality, of the supreme value of the human soul, of justice, of the virtue of law, are somehow a universal projection of the hopes and aspirations of all mankind, and that men everywhere, if political conditions were propitious, would choose to embrace our ideals and values. This is folly, arrogant folly. But it is also dangerous. Marxism strikes at so many of our own highest aspirations that it has been repudiated by most of the civilized West and, in its cruder forms, modified within the European Communist world. But Marxism, as interpreted by Mao Tse-tung, does not necessarily offend Chinese traditional values and, as was seen in 1949 and since, has not aroused hostility; indeed it is almost the unanimous view of observers on the spot that Maoism has almost total acceptance in China. In short, the Chinese response to Marxism was not necessarily the same as the European response, and this for an important reason.

When one speaks of the West as a sort of homogeneous whole, those conscious of the differences among Europeans and Americans and Frenchmen and Russians may wonder in what sense one can think of the West in this way. The answer lies profoundly and deeply in history. If we may speak of the West in any unified sense, if we have a consciousness of being Western, it is because, despite our differences, we have a common heritage and share, in the innermost recesses of our consciousness, certain values, modes of thought, and ultimately language itself, with the Greeks and Romans. We are the children, in a profound sense, of Socrates, Plato, and Aristotle, the instinctive continuers of Roman ideas of law and justice, of Greek ideals of truth and beauty. We think and are persuaded in Greek modes of thought. Our seminal roots lie in the antique world of the Mediterranean. Seeds thus sown have grown and been grafted and modified and enlarged, but the end process of this cultural conditioning is what makes us Westerners and gives Americans and Frenchmen, Russians and Britons, certain common values. For most people these things are intuitive, not self-conscious. But our common bonds are recognizable when we are confronted with peoples from outside of the Western orbit.

Perhaps the first thing that the student of China discovers is that in learning the Chinese language, the *sine qua non* of serious studies, he must cross a frontier not only of a strange syntax, a peculiar script, and an exotic vocabulary, but of ways of thought and of conceptualization for which his own knowledge of Western languages has no parallels. Here is the

root of one of the problems of communication that exists between China and the rest of the world.

In the first place this language belongs to a group, including Tibeto-Burman, Vietnamese, and Tai, with hardly any features in common with any other language group. Its peculiarities — and they are remarkable — are not in themselves barriers to inter-communication. But one peculiarity — the nature of the Chinese script — has political consequences of a very profound kind.

The Chinese writing system is not a way of symbolizing sound, as are our own alphabetical systems, but of symbolizing notions. In the language of modern linguistic theory it is a system that is morpheme based, not phoneme based. This means in essence that written Chinese can be read by all Chinese, whatever the dialect of the speaker and at whatever period it was written, since the script takes no account of either historical or regional sound change. Thus the Han Empire, in its heyday coterminous in time with the Roman Empire and of as great physical extent, needed no *lingua franca* for communication. The peculiar nature of the script provided one. This curious linguistic fact has been, and still is, an important element in unifying the vast Chinese race and facilitating large-scale administration. One of the great feats of Chinese civilization is to have kept a huge Empire in being and its culture intact for two thousand years. This very viability is due in some measure to the language and its script. The language, then, not only isolates China from foreign influences, but acts as a unifying force and as an administrative convenience through its peculiar script, a Chinese invention of some 3500 years ago.

But the language has a further bearing on the shaping of the Chinese ethos: its peculiar script makes the history and philosophy of two thousand years ago easily readable today. The vocabulary of modern Chinese is impregnated with its past. Almost every word in modern use has a history as well as literary associations with antiquity. The language and particularly its script enshrines so much that is culturally conditioned by the past that even the vocabulary of Marxism takes on an irresistibly Chinese flavour. Here lies an important key to understanding modern China. If we are the children of Socrates, Plato, and Aristotle, the Chinese are the children of Confucius, of Chuang Tzu, and of Mo Tzu. Their writings have been the basis of all Chinese education until within living memory. The genesis of Chinese thought lies in its classical period from the sixth to the third centuries B.C., China's Periclean Age. And, while few Chinese today know much about their classical thinkers, the vocabulary of modern philosophical and political thought comes straight out of classical precedent. Just as our basic premises lie deep in our own history, so do those of the Chinese lie in theirs, and the two classical and seminal periods are as different as chalk and cheese.

We are confronted simultaneously in China and in ancient Greece by a sudden and seemingly unaccountable

efflorescence of the human mind. Between the sixth and third centuries B.C., for a reason we can only speculate about, there arose in the history of the human race a series of master thinkers who, each in his way, formed the matrices of thought of great civilizations. We are familiar with the names of our own thinkers, Socrates, Plato, and Aristotle. But we are not so familiar, perhaps, with the names of Mencius, Micius, and Chuang Tzu, the formative thinkers of Chinese civilization. Yet each of these authors is required reading for any understanding of Chinese ways and thoughts. The Chinese philosophers did not raise the same set of problems that the Greeks raised, and there is no historical evidence for supposing that there was any communication of any kind between the Mediterranean world and the city states of the North China plains. With the astonishing versatility of the human mind, the Greeks set off in one direction and the Chinese in quite another. If our history is, as Croce thinks, the history of the evolution of individual liberty, it is because the Greeks set us off on that quest. A society so conditioned in the virtues of human liberty has one response to Marxism-Leninism. The history of the Chinese, on the other hand, is the history of the search for the perfectly ordered society, and Maoism is, in one sense, a perfectly logical outcome of that pursuit. That is why Maoism has such a large measure of acceptability among the Chinese people.

But thought grows in environment. The environment in which Chinese philosophy was born was in some ways not unlike that of ancient Greece.

China's first kings were captive priests, deputies on earth of Heaven, and as early as the tenth century B.C. were called Sons of Heaven. Heaven, so the early Chinese thought, bestowed its mandate to govern the world upon a man designated as its Son. This mandate he delegated to feudatories, who in their turn re-delegated to sub-feudatories, and so established a feudal chain from the King down to the local garrison governor. The Feudal Lords owed to their overlord, in feudal duty, the raising of troops, the supplying of war chariots in time of war, and the sending of token tribute in times of peace. The King supported himself from his own domain, and the Feudal Lords had absolute powers in theirs. The feudal class constituted an aristocracy. The common people (the Chinese language at the time has two words for people, one, *ren*, used exclusively for aristocrats, and the other, *min*, used for the serfs), tilled the Lord's field in common and enjoyed as their reward the usufruct of fields designated for them. This feudal pyramid broke down in the eighth century B.C., the erstwhile feudatories proclaimed their independence, and the garrison towns became autonomous city-states. In the seventh century B.C., profound changes took place. Iron came into general use. Coinage began to circulate. The aristocracy, hitherto engaged only in warlike and priestly duties, began to engage in trade and in teaching the arts of city-state life. In these profound social and economic changes

the polity of the city-state raised great problems. There were states ruled by princes, by oligarchs, and by dictators of common origin. There were attempts to form coalitions of the city-states — a sort of league of nations — and once, in the seventh century, an attempt was made by the sovereign city-states to bind themselves by covenant to abolish warfare and to disarm. This was the first recorded account in history of a Disarmament Conference.

The city-states thus became great forums of debate, and places of political experiment. It was in this welter of speculation that Chinese philosophy was born. Its central problem was the problem of social and political order, its key question "how can we govern well the State?" The central problems of Chinese classical philosophy are order and unity. Some of the city-state princes set up Academies, in which they invited the travelling philosophers to expound their theories and invite preferment. These Academies are the direct forebears of the modern Chinese University. Mencius describes "gentlemen with dozens of carriages in their train, and hundreds of followers going from court to court." The historians of the period, around the time of Christ, speak of this period as the Age of the Hundred Schools of Philosophy — a fact to which Mao Tse-tung referred in 1957 when he said "Let a hundred flowers bloom, let a hundred schools contend", in the now famous "Hundred Flowers" movement.

It would be impossible in an article of this kind to give any adequate account of this flowering of political speculation. Suffice it to say that in 1949, faced with the disintegration following the Sino-Japanese war and the prior weakness of China under the onslaughts of the Imperial Powers in the nineteenth century, a weak and divided China faced the problems of unity and order with a long history of political speculation and thought upon its problems. They were certainly not new to the idea of political theory and political solution.

After the period of the Hundred Philosophers, China was united under the Han Empire (second century B.C.–second century A.D.); and one philosophy, Confucianism, which in the philosophical age had been but one of many, became dominant, orthodox, and all-powerful, but in the process — such is the eclecticism of Chinese thought — embraced features of many other philosophies.

In the fourth century B.C. three rival philosophies competed for the ears of the rulers of the city-states. The first was Confucianism, represented by Mencius, the second Utilitarianism represented by Micius, and the third Transcendentalism represented by Chuang Tzu.

Each of these three very different schools addressed themselves to the one question, "How is the state to be well governed, how is society to become orderly?" They differ both in their approach and in their solutions. To the question "How do we know?" Mencius replied that all knowledge, all truth, was contained in the classics of antiquity. His epistemology was scriptural. There existed in the fourth

century B.C. an anthology of poetry, dynastic hymns and songs of the people, written from the tenth century to the eighth century B.C., known as the *Songs*, and a collection of state documents compiled about the eleventh and tenth centuries B.C. and known simply as the *Books*. These documents, the Confucians argued, present a picture of the Utopia of antiquity, the times of Kings Wen and Wu. By interpreting the language of these classics in ways familiar to some students of our own Old Testament, they drew, with supposedly scriptural authority, a picture of the State in which the Ideal King ruled by the influence of his virtue alone over the natural world – and thus kept in accord the seasons and the orderly round of the times of sowing and ploughing, of birth and death and renewal – and over the entire human family. In the original texts "virtue" was a word which anthropologists know as "mana", the magical force which priests and shamans manipulate to bring hostile powers under control. But in the Confucian vocabulary "mana" was elevated to "virtue", from which was evolved an ethical system of ideal gentlemanly behaviour. This code of ethics, the code of the humane man, became the ideal of the Confucian administrator for all subsequent history. The order envisaged was worked out in a series of duties and obligations, beginning with the joint family, in which each member had an ascending order of importance as he converged upon old age and a rigid set of obligations and duties. Family harmony, the faithful carrying out of the five relationships, the duties of son to father – all these became the commonplaces of Confucian teaching and are a feature of Chinese family life to this day. From the family these interlocking relationships were extended to the State, so that the duty of son to father became precisely the duty of minister to prince, and the entire state was conceived as one huge harmonious family under a virtuous ruler, the "father and mother of his people." The modern word for "nation or state" is *Kuo-jia*, "city-state and family." Built into this ideal was a sanction against abuse, the right of the people to remove a ruler who had lost virtue, since Heaven withdraws its mandate to govern from the unworthy. The corruption of the Kuo-min-tang and the reputed behaviour of Chiang Kai-shek and his family were widely interpreted in China as a loss of the mandate to govern. This theory of the Mandate of Heaven became very important in later Chinese history. It is the one justification for a change of regime, and in the Communist take-over the main burden of propaganda against the former regime was the tale of its corruption. This was a message that the simplest peasant could understand and interpret.

The second of the fourth-century thinkers is Micius. Micius argued that the past has no relevance for the present and that the answer to the problem of order in society and order in the State was to start again in the pure light of reason. He argued that the sum total of human experience attests the existence of a Deity. The Deity has a purpose, a will. That will and

purpose is conceived in love and compassion. We must inquire into the cause of disorder, for then only can we cure its evils. Since all men have the ear of Heaven, it follows that all men are equal in the eyes of Heaven. Heaven rains upon the just and upon the unjust. Heaven manifests its love upon all regardless of person. It therefore follows that all men should love each other without discrimination and with equal intensity.

The notion of universal love in a class-ridden and family-centred society was thought, by his hearers, to be subversive of human life itself. "It outrages all human feelings", protested Mencius. The Confucians had precisely codified canons concerning the duties and affections that should govern the respective members of the joint family and of the orders of society. Nevertheless universal love, argued Micius, is the common consensus of the common good. This leads Micius into his two political axioms: the criterion of the common weal (the greatest benefit to the greatest number), and the accepting of the common accord (the theory that the policy producing the greatest benefit to all must be acceded to by all). It seemed to follow from this, argued Micius, that only the most competent, irrespective of class or family, were fit servants of the commonwealth. And to them should go its greatest rewards.

The philosophy of Micius failed in the final solution in the Han Empire and has attracted little notice since, until recently. In 1882 a German scholar described Micius as "an advocate of socialism and communism", nationalist writers in the 1930s tried to revive Micianism as "universal love", a sort of indigenous Christianity; but under Communism, Micius has been enjoying a new status as the earliest Marxist, who of course, unlike Marx, was a Chinese.

The third of the fourth-century thinkers, Chuang Tzu, taught that the only access to knowledge was in the mystical experience. True knowledge is available only to the adept in trance. In trance one sees the entire universe, the creation as One, the natural unity and natural order, which the adept, by "cruising with the Infinite", can induce in the real world by refusing to interfere and by yielding to "so-of-itselfness" — that is, to Tao. This philosophy in certain of its aspects has had a vogue in Beatnik Zen. More importantly, because Taoist adepts in their search for the drug of immortality were the first alchemists and were largely responsible for the compilation of the Chinese Pharmacopoeia in the eighth century A.D., their successors have a popularity in China today as the first of the people's technologists and the authors of its science.

The foregoing, in an impressionistic way, shows how deeply rooted is political thought and speculation in China, how wide-ranging has been its interests, and how influential a part it has played in the formation of the Chinese ethos. Theoretical Marxism has obvious points in common with the Chinese tradition: the monolithic state; the criterion of virtue and incorruptibility; obedience to severe ethical and moral standards; the raising to the

supreme point of ideals of order and accord; and the prior claims of society and the state over those of the individual. Individualism — the notion of the supreme value of the individual soul — has no place in Chinese thought or social organisation. Rather, the individual finds his protection and security not in asserting his individuality but in subordinating it to the common weal. Dissent, that essential element in the democratic process, is, in the Chinese tradition, the opposite of order; it is in fact the frightening *luan*, "disorder", and therefore reprehensible. One thing Confucianism and Micianism share is the notion that the competent should govern in the interests of the whole. Throughout Chinese imperial history the Confucian elite, recruited by competitive examination, have governed China. The notion of a devoted and ethical elite, whether of the Confucian scholarly orders or of the Communist party cadres, is not a hostile one to the indigenous tradition. Finally, part of the common folklore of the countryside, the result of centuries of conditioning in traditional thought, has firmly embedded in the Chinese mind the notion that the fate of the common people — the common weal — is the ultimate criterion of good government and that once the people suffer unduly, Heaven ordains that its mandate shall be removed from the cause of that suffering.

It was recently mentioned before Senator Fulbright's Senate Foreign Relations Committee that there is in Chinese no word for "freedom" in the democratic sense. There is a word, but it has nothing of the connotation evoked by President Kennedy when he used the word. It means "acting as for oneself", acting independently of the group, and thus acting contrary to the common weal.

China, whether Communist or otherwise, is a cultural world apart — apart, that is, from the West. Some of that apartness is enshrined in the very language and in the very thought of the Chinese. It is absolutely central to understanding modern China to understand the nature of this apartness.

The "apartness" of the Chinese people is an "apartness" not merely of geography but of language and of the modes of thought itself. The historical origins of Chinese thought and the very long period of conditioning which the Chinese people have had in that thought are profound. The language enshrines and keeps alive that thought, and its peculiarities are a unifying influence. One explanation for the very viability of Chinese civilization lies in the nature of the script and of the language in which its essence is conserved. But the language poses problems of communication and of understanding with the rest of the world. The Chinese response to Marxism-Leninism is a very different one from that of the liberty-inspired and individualistic West. Marxist theory undergoes certain changes in the very process of being expressed in a language so alien to Western thought. The clue to the understanding of the present, in China, lies in the ever-present past.

One of the oddest notions abroad in the West is that the Chinese have

repudiated their ancient culture, have, as it were, changed their Chinese clothes for the red dress of Communism and turned their backs on their past. This is, of course, not so. The Maoist view is that the literature, the history, and the arts of China are the heritage of all the people, to be made readily available to them, and not merely the preserve of a scholarly and elite class. China has for two thousand years been governed by a bureaucracy recruited from the intelligentsia. Dynasty by dynasty, Chinese have competed in the provincial and imperial examinations, have risen through the hierarchy by the attaining of higher and higher degrees to the posts of highest preferment in the government. It sounds like the ideals of Plato's Guardians, the rule by philosopher Kings, and so in a sense it has been. But this has segmented Chinese society and created a social order quite different from any we have had in the West. Following the deliberate break-up of hereditary aristocracy based on land tenure in the third century B.C., society has been divided into four traditional classes, those of the scholar, the farmer, the artisan, and the soldier, in that order. Within living memory, scholars wore different clothes, exhibited the degrees they had obtained in the examinations by distinctive tassels and knobs on their hats, and walked down the street with lesser folk stepping aside to allow them passage. The examination system as one follows it over the centuries has had periods of peaks and depressions. It was abused: at bad times degrees were sold and examination questions bought. At its best it produced a number of scholar-statesmen — administrators upon whom every conqueror of China has had to depend in facing the problem of large-scale administration. It is no surprise today to learn that the writ of Peking runs throughout the land right down to the smallest village. This tradition of large-scale administration by scholar-statesmen has two thousand years of history, and in a recent study it was shown that the elite of the Communist Party all come from the mandarin class. At one time it was thought that access to books and the ease with which the rich and powerful could educate their sons meant that a ruling caste in fact existed. Certainly certain families recur and recur in Chinese history. But more recent studies have shown what a remarkable degree of social mobility this examination system permitted. At all events, the highest orders of society have always been the most highly educated, and the deference and respect paid to scholars has in fact created an elite class which took refuge increasingly in conserving its mysteries — a knowledge of the Classics — so that the written language became more and more lapidary, farther and farther removed from the common speech. It was in the Revolution of 1911 that the revolutionaries made the first bid to democratize the written language, to get away from classical forms and to approximate more closely to the spoken tongue. But even so literacy and classical education drew deep lines of division between the literate and the illiterate, so that Chinese culture was the

pleasure of a leisured and literate class and denied to the illiterate and overworked peasants. The Communist view is that Chinese culture is the heritage of all men, and enormous energies have been expended since 1949 in eliminating illiteracy and in making available to all the common cultural heritage of the race. Far, therefore, from repudiating the heritage of the past, the leaders in Peking are determined to make it available to all. This, of course, does not derive particularly from Marxist dogma but rather from Chinese nationalism and self-esteem. The Chinese have always throughout their history been highly xenophobic, contemptuous of barbarians, by which they mean non-Chinese. What they think of as the over-running of China by foreigners from the middle of the nineteenth century has stimulated, if anything, a pride in China's past achievements. It provides the core of a sense of nationality and identity, and occasions much of the energies and sacrifices that the Chinese people are prepared to go through to rebuild and modernize their nation.

The Chinese word for civilization is *wen-hua*, which means roughly the process of change that literature brings about. The centrality of scholarly and literary endeavour, the prestige of its scholars and writers, and the almost morbid passion for learning are part of the Chinese heritage, and rarely in recent times has that feature of the Chinese ethos been more in evidence. Westerners have often remarked upon the astonishing avidity for learning, the intenseness and seriousness of purpose of Chinese students. This derives from a centuries-old conditioning that all Chinese have had in the respect for learning and the rewards that come to the good scholar.

To a Sinologist, one of the consequences of the coming of the Communist regime is that books, many of them once scarce and expensive and difficult to obtain, have suddenly become available in cheap editions, excellently edited, properly paged and indexed. An edition of, say, a twelfth-century classical novel is put out today in an initial press-run of six million copies. The publishing output of Peking has been so great that at periods there has even been a paper shortage. Another consequence has been an enormous increase in the number of scholarly journals published. In one field alone, linguistics, three new journals have appeared since 1949. In Chinese art, the effects have been quite the reverse. Chinese porcelain and painting of quality were not difficult to buy before 1949, but since then the most rigorous controls have been placed on the export of "national treasures", so that outside of China the prices of quality pieces have risen well beyond the means of modest collectors. In China itself, every province now has its provincial museum, and the museums in Peking are said to be a byword for excellence, not only for the quality of the material but for the techniques of display and exposition they have evolved. Another consequence of the rise of the Mao regime has been the extraordinary high priority that archaeology has

been given under the regime. It has always been known that rich sites awaited excavation, but in an appalling period of neglect in the 1920s the most accessible sites were looted and exploited by entrepreneurs, and the best of Western museum collections come from this period of predation. The Kuomintang, under the Academia Sinica, tried to exert some control, but it was feckless and the scale of excavation never large. Since 1949 there have been some fifty major archaeological teams at work on sites, and the study of prehistoric China has made enormous strides. The material, of course, goes to the provincial and national museums, and much of it has not yet been seen outside of China by Western scholars. There has, however, been not only a very considerable raising of the standards of scientific excavation and documentation, but very good reporting and publishing, so that Western scholars can keep abreast of development. China under Communist rule, far from repudiating its past, is, in short, reliving it as it has never done before.

One of China's greatest cultural treasures is to be found in its Dynastic Histories. For twenty-five dynasties it has been the Chinese custom to write the history of the previous dynasty, and these, the *Twenty-Five Dynastic Histories*, have survived to the present. They constitute a detailed accounting of the last two thousand years. A microtype edition, in the possession of the author, printed on India paper, and readable only with a magnifying glass, occupies twice the shelf space of the *Encyclopedia Britannica*. Chinese historical writing began with the annals of the city states. We possess one such annal from 721 to 479 B.C., recording in brief entries a catalogue of the treaties entered into, ominous happenings, and the goings and comings of the court. All states kept such annals. One we possess in its entirety, and others exist in fragments and citations. We also possess two narrative histories of around the third century B.C., rich sources for the social history of that period. But it was in the first century B.C. that an official at the Imperial Court and his son began the writing of the Official Dynastic Histories, which, dynasty by dynasty, has been carried on as an essential part of state government up to 1927. The first historian, Szu Ma-ch'ien (c. 145–90 B.C.) deserves more than passing mention. He must, in any pantheon of the world's great scholars, be accorded an honourable place. His view of history was that social stability and ethical ideals could only be maintained if daily events were meticulously documented and the unedited record be held up as a mirror for princes. His structuring of history too was interesting. And this structuring set the pattern for all the dynastic histories that followed. The history was written in five parts. The first part he called the "main thread", a figure taken from weaving from the warp in a piece of tapestry. This was the story of Imperial succession, of the transmission of the Mandate of Heaven from sovereign to sovereign. Here are the lives and activities of kings and

queens and of the conduct of the court. A second part, subsequently abandoned, records the history of the "hereditary houses" — a polite way of recording the histories of the city-states which acted independently of the Sons of Heaven. The third part consists of genealogical tables and charts and is a chronology in tabulated form. The fourth part consists of monologues on a wide range of subjects: the monetary system, astronomical observations made during the dynasty, commercial and mercantile regulations, the regulations for court and civic dress, in short a sort of economic and social history treated topically. The fifth part, a recognition that history is the sum total of biography, consists of biographies of some one or two hundred of the most prominent men of the dynasty and constitutes a sort of cumulative dictionary of national biography. This enormous work, begun by a father and completed in filial duty by his son, was the first and last history written, as it were, under semi-private auspices. With succeeding dynasties the work was compiled from daily records kept by officials, and written as a document of state.

It is difficult to describe what richness of material is contained in these histories, not one of which has yet been translated in its entirety into any other language. But, and particularly since the twelfth century A.D., other and different histories have been written and have been preserved. There are, for example, some five thousand local histories, histories compiled of cities, of districts, sometimes of temples, sometimes of families. To know nothing of these histories — and very few scholars outside of China do — is not to understand one of the most interesting and revealing intellectual battles going on in Peking at present. As one reads the historical journals, it becomes clear that the dilemma of the orthodox Marxist historian confronted with such detailed documentation is to find the familiar Marxist periodizations, to justify the Marxian stages of history, even to decide when such stages occurred — if they should be useful to determine. This is the stuff that divides scrupulous historians in China today. The traditional view of these histories, on the other hand — the Confucian moralistic interpretation — has been challenged since the early 1920s by Chinese historians who have come under Western influence. One interesting consequence of all this controversy is that this rich historical material is being explored anew with new perspectives in mind. One such is the history of science. As readers of Needham's introductory volumes will know, as the history of science and technology unfolds itself in China and as evidence is accumulated from the rich sources that have survived, it is becoming clear that China has an impressive back-history of technological invention, a sort of historical base upon which the new scientists of China are building. Two members of the Academy of Medicine in Peking who recently visited Canada were telling of the existence, side by side, of traditional and Western medicine in

the medical schools of China. It was in the Chinese pharmacopoeia of the eighth century that the therapeutic properties of ephedrin were first described, and much may yet be found among the results of Chinese empirical discovery that will prove useful. At all events, no peoples have ever been such assiduous recorders of their history, no peoples quite so conscious of their history, and, as far as the present generation of scholars is concerned, seldom has interest in Chinese history been so lively and productive as it is today.

Visitors to Communist China bring away with them a sense of the newness of everything, an impression that propagandists are quick to underline and try to document. In some senses there are novelties, but the Communist Party has a very real interest in giving the impression that everything is new and attributable to the virtues of Communism. But to anyone familiar with the history of China, there is much also that seems familiar.

Of the highlights of Chinese history which help to bring modern China into clearer perspective, the first, already touched upon, is the long history of bureaucratic skills that the Chinese have acquired and developed. The dynastic histories were written by civil servants and have always served as a guide to administrators, for government in China has historically always been by bureaucrats. "Politics", the struggles for power, have not been between class and class, between one economic interest and another, but between rival cliques of bureaucrats manoeuvring for the spoils of office. These intuitive bureaucratic skills are in themselves, apart from party dogma, a resource of the first importance in ruling a country as large and as populous as China. And since the historical tradition has been that the bureaucrats subscribe to orthodoxy, whether of Confucian training and its code of ethics, as in the past, or of Party discipline, as in the present, it is unhistorical to suppose, as it is often said, that China is unified and well governed for the first time in its history. This is patently not so. In comparison with the declining years of the Manchus and the struggling years of the Kuomintang, of course, Communist rule is by sharp contrast honest government, and government whose writ runs throughout the land. But this is a recurring theme in Chinese history. There have been not one but at least three periods of draconian regimes, periods of frightening totalitarianism under a strong father-figure following periods of decline and dissolution. The first, in the third century B.C., was that of the Ch'in Shih Huang-ti, the first unifier of China. Once execrated by orthodox historians, and cited by Western historians as a horrendous example of totalitarianism, Ch'in Shih Huang-ti has recently come in for re-evaluation by Communist historians as one of the architects of China's greatness. It was Ch'in Shih Huang-ti who was credited with the notorious burning of the books and with the immolation of two hundred scholars so that the memory of past history might be blotted out, and for this Confucians have damned him ever

since. But Ch'in also built an enormous network of highways across China, standardized weights and measures, nationalized the currency, and built the Great Wall. For these prodigious works, done at terrible cost to human life, he is being given credit by the present regime. When one hears of the great public works, the building of dams and reservoirs, by thousands and thousands of workers today, this is not something new; it happened in the reign of the First Emperor. It also happened again under the Sui Dynasty (590–618 A.D.) – another period of hideous repression, of totalitarian methods, but also of getting things needed done, for the Sui built the great canal system that shifted the movement of grain across the Empire more expeditiously and greatly increased the mobility of the Imperial forces. No one would suggest, as a number of twelfth-century Chinese historians tried to discover, that there is a recurrent and cyclical pattern in Chinese history. But large-scale public works and draconian measures are no novelty in China, and are certainly not an innovation of Marxist inspiration. In the past such regimes have lasted some twenty-five years.

One other recurring theme of Chinese history, and an essential part of the folklore of its thinking, is the mechanism by which a failing regime can be removed and changed. It has been said that in modern Africa one of the problems of new regimes is that no political mechanism exists short of a *coup d'état* for changing a regime that has got out of touch with reality. This mechanism has always existed in Chinese history and is wrapped up in the theory of the virtue of the leader and the withdrawal of the Mandate of Heaven. When the leader loses "virtue", so the theory goes, the "great accord" gets out of joint, the people suffer, and popular disaffection is the signal of Heaven's displeasure and a justification for removing the mandate and changing the regime. One of the new emphases of interpretation of Chinese history that engages the attention of historians in Peking today is the study of the process by which popular disaffection comes about, how peasant rebellions occur, and how regimes are changed. There is already an enormous literature on this subject. This theory does not suppose, or even consider, that the common people have any choice in the selection of their rulers. It supposes that the condition of the people is an index of the virtue or effectiveness of the ruler, which is quite a different thing. Popular satisfaction with a regime does not derive from the knowledge that it is self-elected. It derives from the state of the peoples' well-being. It is easy to see how Chiang Kai-shek and his party had, in the traditional terminology, "lost its mandate". It is also easy to see that amelioration of the lot of the peasants is in itself (in these terms) justification and in fact a vote of confidence for the regime that brings it about.

Another recurring theme of Chinese history, and one which is of very great moment in the present, has to do with Chinese notions about Empire. The First Empire, that of the

Han, was really a consolidation of the territorial gains made by the Chin Emperor in the third century B.C. It was based upon certain Chinese ideas of the world and of their place in it. In Chinese thought the "world" is *T'ien hsia*, "all under Heaven", and sovereignty is the right of the Son of Heaven to govern "all under Heaven". In the earlier cosmogonies, the world was thought to be square with the "four seas" on its four edges. The world then became "all within the four seas" and "all under Heaven" in the two commonest clichés in the classics. The city states were the "centre States" and, after the unification of China under the Ch'in, China (the name derives from Ch'in) became the Central State, the centre of the Universe, and the site of Heaven's viceroy upon earth. The Son of Heaven stood precisely in the middle. This egocentrism of the Chinese has powerfully influenced Chinese views of the world, both in antiquity and today. A history of the Ch'in and Han Dynasties, published some fifteen years ago, enjoyed the unusual distinction of being published both in Peking and Taiwan. The author began by describing the territorial state of China in the first century B.C. — an Empire then extending well into Tibet and Central Asia, the Gobi, and Mongolia, Manchuria, and Korea, and down into what is now Vietnam. This, in the Chinese view, is the world, that of the Central Kingdom and the kingdoms of the four barbarians. The historian then went on to declare that all loyal Chinese (meaning both Peking and Formosa) have a sacred duty to keep the confines of the erstwhile Empire intact, as being historically and irrevocably Chinese. In the Han Dynasty there were interminable debates as to what to do about the "western regions" and the periphery states — whether to rule them directly or to maintain a loose sort of suzerainty over them to be symbolized by the barbarians bringing token tribute to the Court. These two schools of thought have clashed in history again and again. The forward policy of occupation was advocated by military groupings, and the "rule by virtue" advocated by the Confucians. By the eighteenth century the dispute had been settled in favour of ruling by virtue, and all of these countries — Tibet, Korea, and Vietnam — had quasi-Chinese courts, customs, rituals, and procedures, but were rarely directly occupied or administered. In the history of the Chinese Empire, it has always been one of the measures of the virtue of the regime that the barbarians of the four quarters acknowledge Chinese suzerainty and bring tribute, attesting the superior culture of China and acknowledging their indebtedness to it. Now all this is very different in form and conception from Western imperial practices. But it is very Chinese. Any regime in China, whether Kuomintang or Communist, would have to ensure that its periphery states, at least in token, acknowledged China's suzerainty, though this would not mean the use of Chinese administrators or the occupation by military forces. It is a conception of the world, seen from the Chinese view, that promises security.

This sort of thinking obtains in Peking today. China has never been a mercantile or naval power, has never embarked on overseas adventures, and has not any ambitions to set out on world conquest, or even to break down the States of South East Asia by successive occupation. She is, however, vitally concerned that the periphery states should be pro-Chinese. Foreign presences in any of these areas touch Chinese sensibilities, and a presence that appears to constitute a threat to Chinese territory itself, would, in the belief of this writer, immediately provoke a defensive war by China. In the present dilemma in Vietnam, as in Korea and Taiwan, it is important to understand how the Chinese feel about these areas, and to know that any regime, Communist or otherwise, would feel the same way. This explains perhaps the reluctance of China to send combat troops into North Vietnam, but it also explains its vital concern in the survival of North Vietnam. Personally, the writer is in sympathy with the advice that American Sinologists have recently been giving the Senate Foreign Relations Committee: that containment of Chinese expansion may be quite proper, but that a failure to recognize the very emotional claims that China feels it has to special status in these sensitive areas is highly dangerous, and is likely to begin the thing that everyone wants to avoid, a war between China and the United States.

In summary, therefore, the very centrality of China in the world's problems, both today and in the future, seems certain. China's apartness, however, presents formidable problems in communication and understanding. Communist China is not, as a Western-oriented political theorist might be tempted to believe, working from theoretical Marxist premises alone. The clue to understanding Communist China, and therefore to wise policy-making, lies in a very much more profound understanding of China, its peoples past and present, than prevails in the West today.

The problem of China for the West, as of that of the rest of the non-Western, but newly emerging states of Africa and Asia, lies in better knowledge and more intelligent understanding. It is pre-eminently the duty of the universities to engage in those detached and serious academic studies of the unfamiliar worlds of Islam, of Hindu South Asia, of China and Japan, upon which wise policies can be based. The stars of these countries are now in the ascendant. They will be of increasing concern to us in the future. A Chinese classical strategist of the third century B.C., much quoted by Mao Tse-tung, has said "Know yourself and know your adversary, and though you engage him a hundred times, you will invariably be victorious."

Since this article was written, the Red Guards have taken to the streets in protest at the survival still in Communist China of so much that is incorrigibly Chinese. What success they are likely to have remains to be seen.

In Barbados, the President of the University commends the College of Arts and Science for its resolve to shun the easy path to popularity in favour of adherence to the highest principles of higher education

The disinterested, systematic and informed pursuit of truth

Claude Bissell

It is a particular pleasure to come to this new college in the University of the West Indies. The federated college system is one that we instinctively understand in the University of Toronto; the federated principle enabled us to emerge as a university and now, in the age of the multiuniversity, it is our first defence against faceless bigness. As yet you do not battle with numbers, but you must confront the fact of distance; and federation for you is both a convenience and a strength. The federated system flourishes when its colleagues emerge from their own cultural environment, when they look to the university not as a powerful creator, but as natural ally. Then loyalty to the university is accompanied by a sense of lively college identification. Such a cultural tradition, such a sense of identification, you have in strength in Barbados. For centuries you have a record of fostering education of high quality at all levels, and in your national life is a sturdy thread of cultural and political self-awareness.

The establishment of the College of Arts and Science in Barbados preceded by only a short time the obtaining of political independence. You are celebrating now that great event. Canada, too, has a year of celebration to mark the hundredth anniversary of our emergence as a united nation. We are a young nation, in some respects younger than you. Just two hundred years ago the West Indies were looked upon as far more important economically than Canada; here in Barbados the tradition of parliamentary government predates by almost two hundred years the emergence of similar institutions in Canada. I could wish that in our

celebrations this year we could recall and recite such stirring words as these, which were addressed in 1651 by the Royalist Barbados House of Assembly to the Cromwell Parliament: "Shall we be bound to the government and lordship of a parliament in which we have no representatives? In truth this would be a slavery far exceeding all that the English nation has yet suffered. And we doubt not that the courage that has brought us thus far will maintain us in all our freedoms without which our lives will be uncomfortable to us."

I should like to say something about the university and national life. It is a subject that is of some interest to you at this time when your national life is set on a new course and this college is taking a distinctive shape. And it is a subject that is of interest to Canadians too. Despite the differences in magnitude, we can ask ourselves similar questions. The University of the West Indies is a new foundation that grew out of discussions held towards the end of the last war, and, in a strict chronological sense, it belongs with the group of African universities that had a similar origin. By comparison Canadian university foundations are seasoned by time. But then one recalls the antiquity of Codrington College, and the long tradition on this island of association with Oxford, Cambridge, London, and Durham.

Let us look, first of all, at the role of the university in expanding national consciousness, in persuading a country to turn its eyes outward to the world beyond. This role is of particular value to universities in the New World, whether they be in Canada, the United States, Latin America, or the Caribbean. All of us who came here were cut off from the full extent of our European or African heritage. Those from Europe brought with them a particular aspect of the parent European culture, and the ingrained tendency was to cling to it tenaciously. Thus in my own country the settlers from France brought with them a devotion to a feudalistic society and to the corporate state that even the gusts of democracy and secularism cannot sweep away. English Canada is largely a Victorian export – materialism camouflaged or softened by strong moral convictions, a belief that standards of taste and conduct are fixed and immutable, a faith in progress and the triumph of right, which turns out to be close to one's own prejudices. I do not know to what extent these Victorian values were also brought to Barbados. Certainly the African inheritance would not permit them to exist in their purity. But in other respects I gather that Barbados clung to its European heritage. In the line of Frank Collymore, Barbados was "this sliver of an old world adrift upon a foreign sea."

The essence of colonialism, I would suggest, is devotion to values inherited from elsewhere, even when these values change or disappear in the parent culture. Colonialism such as this becomes persistent if there are no native institutions of higher education. For the university can help to return a culture to its sense of wholeness and,

beyond that, can invite a look at the remote and the exotic. This is what I mean by the role of the university as an expander of the national consciousness. It can help to undo the sense of cultural leanness that arises from isolation. It can restore a country to the international cultural network.

A university does not, however, cut us off from the familiar. Along with the broadening of national consciousness goes a deepening – an understanding of the world we ourselves have fashioned. All of us in the new world begin with a sense that we are the custodians of a great tradition in a new land. We have always responded to lines such as these lines of the poet Samuel Daniel, who at the beginning of the great age of exploration and settlement wrote about the English language as the forerunner of imperial splendour:

And who in time, knows whither we
may vent
The treasure of our tongue, to what
strange shores
This gain of our best glory shall be
sent
T' inrich unknowing nations with
our stores?
Or who can tell for what great work
in hand
The greatness of our style is now
ordain'd?

It was soon discovered, however, that greatness did not easily emigrate. Even mighty America had to wait for many years for the great work envisaged by the poet. Barbados had a mixture of cultures and races which posed problems in national identity, but launched a quest for an elusive distinctiveness. In poetry, for instance, there was, as Derek Walcott has pointed out, "the raw spontaneity of dialect", on the one side, and, on the other, "the syntactical power of English", which created a conflict, "a dramatic ambivalence, which is part of what it means to be a West Indian now."

Expositors of national life

The university has not always responded to the task of national self-understanding. Indeed its very concern with the great classical achievements, in Rome, Athens, Peking, London, Paris, made the local effort seem trivial. It has taken many years for universities in the new land to accept their role as expositors of the national life. These obligations are now fully honoured, and your historians and economists, for instance, take much of their material from the West Indies. Your literary scholars are less concerned with the native literature since imagination does not flourish quite as easily as sugar cane or as political crises. But that will change as your writers, growing in strength and authority, find in the university a hospitable home and a source of refreshment.

So far I have talked about the university as a means of sharpening and refining cultural identity. What about its immediate relevance to political, economic and social problems that press upon us insistently today, particularly in the developing countries?

There is a simple, practical answer to that question. The university should follow the course of economic needs as they rise, and strive to meet them by preparing students for specific jobs: where the needs are great and the means of meeting them inadequate, the university can provide the quickest answer. The university thereby relieves the economic and social pressures, and becomes a benevolent social agent universally understood and respected. But this, I take it, is not the course that has been chosen here. You have decided that your University should have high academic standards comparable to any in the world; you have given first place to the study of the fundamental disciplines and to the major professions. And I think you have been right. There are many instructive examples elsewhere in the world of the unhappy results of looking upon higher education as essentially a consumer's good to be made available as speedily and widely as possible, irrespective of academic standards. The result has been, too often, failure even to meet the basic economic needs and, much more seriously, the abandonment of the university as the chief source of a cadre of leaders and public servants upon which any programme of economic and social development must ultimately depend.

"Clear devotion to scholarship"

A university that does not select and discriminate surrenders another major role that rightfully belongs to it. That is the role of the critic of society – the disseminator of disinterested, objective and informed comment. Political democracy needs such centres of criticism. Certainly the very process of political democracy generates vast quantities of criticism. But it is often what might be called debating criticism—designed to confuse and to confound rather than to illuminate. In an urbanized society the great newspapers, immune to casual pressures, can provide centres of disinterested comment. The university can play a similar role, not by issuing editorial pronouncements, but by encouraging members of the staff to speak out on problems about which they have special knowledge, or, indeed, only lively interest; and by setting up, as you have, special research institutes concerned with your besetting problems. If it is to play such a role effectively, the university must possess the authority that comes only from its clear devotion to scholarship. And this can flourish only in the university where both staff and students are devoted to the intellectual life. Here we come to the real basis of academic autonomy. Autonomy does not depend upon financial independence, for in these days no university, not even the mighty private foundations in the United States, is financially independent. Nor does it depend upon isolation from politics, which at best is nervous and unreal, for every university these days must engage in constant conversations with those who have been elected to public office. Academic autonomy really depends on a broad, social assumption that,

despite the exigencies of the moment, we must not make decisions on inadequate information. Society must give high place to the disinterested, systematic and informed pursuit of truth, or invite its own undoing. And no instrumentality for this pursuit has yet been devised that is superior to the university.

In my remarks I have been trying to show that the university has social goals over and above those that can be described in strict economic terms. We have emphasized the latter a good deal in our discussions recently, and rightly so. It is not demeaning to the university to suggest that it can lay up treasures for society on earth as well as in heaven. The University of the West Indies has stimulated the economic life of these islands and will continue to do so. And yet I should think that its contribution to the intellectual tone of society, the awakening of national consciousness, the opening of new windows on the world, the critical light that has been brought to bear upon your problems, these are its great achievements. The University of the West Indies has been able to do this because it was fashioned in a large and philosophical sense by men of vision. It stands today as the greatest of your achievements in this century. It is the recognition of the centrality and primacy of the University that has led the Canadian Government to devote so much of its assistance in the Caribbean area to the University of West Indies. Most of us in the academic world of Canada are eager to see this assistance become greater. I am delighted that some of it will be used here in Barbados and that Canadians can participate in some small measure in the growth of this college. We take a particular interest, then, in your graduates. May their numbers grow and their influence spread ever more widely.

A Jamaican Reading List from Professor Benjamin Schlesinger

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Lecturing at Queen's University under the Chancellor Dunning Trust, the Principal of University College talks about the public good

Authority and Revolt

Douglas LePan

One of the things, I think, that is required from those of us who are ruled is not to ask for too much. I am not thinking, perhaps I hardly need to say, in economic terms, of demands for increased social security benefits and increased coverage. During my lifetime great progress has been made by society in shielding us all from at least the worst effects of the accidents and misfortunes to which we are all subject — and that is all to the good. Gaps remain to be filled and levels of protection to be raised, and it is healthy that demands for such improvements should continue to press against the total resources of society available to meet them. What I have in mind, though, is something quite different.

As society comes closer and closer to the point where it can satisfy the physical wants of all its members, and as concurrently the influence of religious and metaphysical systems declines, the claims of subtler human cravings become more naked and more insistent. They cannot be satisfied by government. They cannot be satisfied, I believe, by institutions of any kind, although perhaps they sometimes may be satisfied through institutions.

To ask that governments or other institutions fill that role is to ask too much of them. That is to court continuing disappointment and frustration. All that governments and other institutions can do is to weave the loose free networks within which such individual cravings, of so many different kinds and qualities, can conceivably find and consummate their satisfactions. And that suggests

This section of Dr. LePan's address is reprinted from *The Montreal Star*. The complete text is scheduled for publication in *Queen's Quarterly* of Queen's University, Kingston.

another sort of tact and forbearance that is required from those of us who are ruled.

The networks of freedom in any society are complicated and delicate and far from invulnerable. To forget that, to forget that they require constant care and instead to focus exclusive attention on the quality of the experiences that take place within them and that they help to make possible, is to court not only disappointment but disaster.

The Role of Power

And from our rulers, what is required from them? Well, as I have suggested, all the things that have been required of them in the past, and particularly that daily courage and resilience which is such a rare and remarkable thing, and which is so difficult to describe to those who have never watched it in practice. And then, too, that they should heed Cromwell's warning that they "may be mistaken" and Lord Acton's that "power tends to corrupt". But in our new circumstances, I think there are other things required of them as well.

Those who have been chosen to govern must have power and must have the courage to wield it. But it is an imperative of our situation that they use such power as they have been given to curb power that is out of control and bring it to the test of the public good. Obviously that is easier said than done. But it is equally obvious how necessary that undertaking is if we are to have a truly human society. More largely still, it may even be that if we are to have a human society at all on the face of the globe, those who govern us must be working for a regime in the relationship between states where power itself will be transcended or transformed. Or so at least I would see the developing implications of our own legacy of political ideas that have insisted for so many centuries that government should be responsive, responsible, and limited.

In domestic affairs it seems to me that those who rule us must increasingly try to see their tasks in a different light than they have ever done before. For more than three centuries it has been the task of the liberal imagination and the liberal will to break the shackles of the past, the shackles of privilege, monopoly, arbitrary power — and that task, in some form or another, is probably unending. But for 50 years or more it has been taken as an additional task by the liberal imagination to give positive content to freedom by promoting directly the economic and social welfare of families and individuals. That task is not done either, and will probably be with us for decades.

Enough progress, however, has been made in both directions to permit energies now to be released for still a further task — and that is to create a human environment about the lives of all of us. That task also will probably prove not only difficult but unending. Even if it were finally achieved, the creation of a human environment about our lives would

provide no sure appeasement for human cravings, aspirations, longings. But it would be something good in itself, and it might offer suggestions and provide means for a wider range of truly human satisfactions.

If progress is to be made in the direction of creating a human environment about our lives, it seems to me essential that there be brought into the foreground an image of man in all his complexity, mystery, and splendor. I say an image of man because that is the way my mind moves—in images.

"Orbed Fullness of Human Life" — an editori

BRAVE is the word to describe the man who attempts to analyse the basic malaise of our time. Even more brave he who suggests certain approaches to a remedy. The hero in question is Principal Douglas LePan of University College, Toronto. The occasion, the delivery of the Chancellor Dunning memorial lecture at Queen's University. Its title: "Responsibility and Revolt." He discussed what he properly calls the "wide and deep erosion of the bases, and particularly of the moral bases, of authority," the collapse of traditional values and the failure, so far at least, to replace them by others more adapted to our age.

Everyone knows the revolution is on, though naturally the ranks of youth provide its more startling manifestations. But everyone is in on it, for old and young alike are in the iron grip of scientific and technological change. This in turn changes human beings into faceless, computerized digits, mere statistics. In such circumstances they behave as human beings always do: they rebel. As Mr. Lepan, in his lovely prose, describes the process,

"The models may be many-sided and highly sophisticated. They may have so many moving parts that you can tell from them, within the limits of the hypotheses on which they are constructed, what the effect will be on total output, or life expectancy, or juvenile delinquency, if X per cent of the population gives up drinking and takes to smoking marijuana instead. But however much of a polyhedron the model may be, it can never duplicate the orbed fullness of human life. And however many figures you put down on a chart, you can never join them into the profile of a man."

So man violently rebels against every aspect and every manifestation of authority. It is a rebellion akin to anarchy for it seems to have no objective. Yet it is not anarchy for surely it is man's only way of asserting his humanity. Some new scale of values will eventually arise. Such, at least, must be our hope. There is a deep ancestral instinct for order in the human race, an instinct clearly manifest in all the evidence of pre-history. No society, animalistic, tribal, or modern, will endure without it.

It is an instinct that wars with

But it must be an image large enough to include great differences within itself, differences biological, temperamental, psychic. It might be an image, I would suggest, of man rising from the sea, with the surf, the brine, breaking around him, and with all the sea's potency and potentiality in his veins, an image of man, the critic and master of nature, and yet its finest testimony, with each of his organs bound oracularly to the cosmos as they appear in the old almanacs.

So seen — a creature of divided allegiance, the product of nature and yet its judge and master, born of it, and yet separated from it by consciousness and self-consciousness, and still suffering, whether nobly or ignobly, from that separation — so seen, it might be more possible to create about him, about us, a truly free and human order. It is nothing less, in any case, than some such image that I would commend to those who are set over us, bidding them at the same time remember that the creature so figured has sometimes on his tongue the taste of some impossible consummation in the future or of some remembered perfection, now hauntingly, irrevocably, lost.

Those intimations are of moment. out of time. And we need — if I may use words from a poem by Boris Pasternak — "We need eternity to stand among us like a Christmas tree." If I am asked what these words mean, I am abashed and unsure. But as a gloss on them, I might offer a sentence by a modern philosopher who was a great cleanser and analyst of language, Ludwig Wittgenstein. "If we take eternity to mean," he wrote in the Tractatus Logico-Philosophicus, "not infinite temporal duration but timelessness, then eternal life belongs to those who live in the present." I think that Pasternak would have agreed with

rom *The Montreal Star*

other similarly deep patterns of behaviour, but it endures. We go on, as Mr. LePan says, and on and on and on. He quotes Ludwig Wittgenstein, "If we take eternity to mean not infinite temporal duration, but timelessness, then eternal life belongs to those who live in the present."

Mr. LePan sees the desperate need for the principle of authority to assert itself. Governors we must have, but he sees them operating — or trying to — without any of the old traditional sanctions. Their task has by so much become infinitely more tricky and dangerous. They must, in the present temper of things, guide rather than govern. He believes that the technocrats have put us on the road to material utopia in which want, poverty are banished, and in which fruitful leisure becomes a possibility for everyone. But, like every other liberally minded man, he shies away from conformity and regimentation. It will be the task of our governors tomorrow, to preserve that magnificent heritage of freedom, diversity and dissent which we have inherited from our forebears. Computers, in other words, must be kept in their place . . .

that. So do I. But I think that Pasternak perhaps meant more than that. And so would I. But however the words are taken they will serve to suggest both one of our deepest needs, and also the difficulty of those who, called on to rule, must try to create a human environment about us that will leave large room for human differences and human longing.

To the extent that they are trying to do that, however fallibly, however imperfectly, I can see no reason to deny to those in positions of responsibility the tribute that is their due because of the necessity and difficulty of their task. They have nowadays little support from tradition or from authority in the family or the church. They must deal with forces that are largely out of control and which they must yet try to curb. They work with the possibility of annihilation, of world-wide annihilation, always at their back. The causes of revolt, particularly of revolt among the young, are deeper than they have ever been before. There are no widely-recognized religious or philosophic systems to redeem the world from meaninglessness. And yet, in the midst of these difficulties, they must go on.

And so must we, finding in ourselves such courage as we can; the young, I would hope, making of all their youth and ardour the best use they know, since the taste of perfection, the taste of the absolute, fades too quickly into the taste of death, and since youth, if it is today a kind of new aristocracy, is an aristocracy more surely to go to the guillotine than any other in the past; and those of us who are older, remembering — but not allowing our memories to turn into bitterness — developing, I would hope, a strength that has sweetness rather than bitterness at its core, and striving in the face of meaninglessness not only to survive but to begin to sketch a lattice of ideas that may be a fit counterpart for the more human environment that we so greatly need. Those too are difficult tasks. If we shoulder them with honour, it may be easier for us to find it in our hearts to pay honor to those who are charged with the political and social responsibility for providing and ensuring us a human habitation.

MEETING PLACE

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INTRODUCTION

THE ROM IN BRITISH HONDURAS

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INTRODUCTION

A few remarks on ROM *field trips and expeditions*

PETER C. SWANN, Director

The Royal Ontario Museum carries out archaeological projects in many parts of the world. In fact, one is tempted to reflect sadly that Canada's greatest Museum is known far better outside Canada than within it.

Certainly no better way exists of showing the Canadian flag abroad than through this international activity – at once scholarly and fascinating.

The Museum constantly receives requests from many parts of the world for our help in archaeological work. Our staff is the finest, most experienced in Canada and we would like to do far more than our present resources allow.

Canadian representation abroad in the field of the humanities is vital. For example, Canadian Institutes in places like Central America would be of inestimable value. But the R.O.M. needs the support of the whole country for its international projects.

We print here an account of our fourth season at Altun Ha in British Honduras. It makes exciting reading.

Any reader can receive our regular Archaeological Newsletter (and much else besides) by an R.O.M. Membership. The annual membership fee is $15.00 for those in the Toronto area and $10.00 for those outside the city.

THE ROM BRITISH HONDURAS EXPEDITION

Excavation of a Mayan civilization at Altun Ha

David M. Pendergast, Expedition Field Director

January of this year marked the beginning of the fourth season of a five-year project of archaeological excavations carried out by the Royal Ontario Museum at the ancient Maya site of Altun Ha, located on the Caribbean coast some 30 miles north of Belize, the capital of British Honduras. It has had the support of the Harvie Foundation, the Wenner-Gren Foundation for Anthropological Research, the University of Utah, and most recently, the Canada Council.

A part of the Maya culture area, which comprises also the Yucatan Peninsula, Guatemala, southern Mexico, and western Spanish Honduras, British Honduras has long been a focus of interest for archaeologists. However, despite more than a half-century of exploration and excavation in the country, much of it remains unknown archaeologically. Prior to the initiation of the Museum's project at Altun Ha, the entire northern coast of the country was an archaeological blank, and selection of this site for excavation was based in part on the hope of providing data to fill in at least some parts of that blank. However, as so often happens in the jungle-clad Maya area, chance discoveries were an important factor in recognizing the potential of Altun Ha, and in the decision to focus the efforts of the Museum expedition on the site.

We set out at Altun Ha with the knowledge that others who had worked in inland sites in British Honduras had long considered that the coastal strip of the country was a sort of cultural hinterland, a backwater area in which little of import had occurred, in which no more than a small part of the richness which characterized Maya civilization elsewhere was to be found. They thought that cultural developments had come far later there than in the heartland of the Maya area. Among the many contributions which the

Museum's excavations have made to our understanding of the Maya, perhaps the major one is an almost complete refocusing of views regarding this periphery of the Maya region. It has resulted in a recognition that the land along the Caribbean was as important in the flow of Maya prehistory as were the inland zones.

The site which we choose to investigate lies on an extensive stretch of limestone platerock, only slightly above sea level, and approximately six miles from a large lagoon of the Caribbean. Most of the intervening area between site and sea consists of lowland and littoral swamp. In a part of the world known for the poor quality of its soil, the area of the site centre at Altun Ha falls near the lower end of the scale of agricultural potential. This is due primarily to the thinness of the layer of soil which caps the limestone. While agricultural potential was a primary consideration for the ancient Maya in selection of a site for habitation, it appears that at Altun Ha the presence of several large ponds, at least one of them spring-fed, was probably the most attractive aspect of the area for the ancient inhabitants. The site grew up around the water sources, with new, artificial catch-basins being added as the population increased, until a maximum area of something in excess of four and one-half square miles was achieved. Like many, but not all, such sites in the Maya area, Altun Ha was, at least in the later centuries of its existence, almost a city, or urban centre, though it differs in some respects from cities encountered elsewhere in prehistory. Though we cannot yet provide any meaningful estimate of maximum population, it is clear that there was a concentration of residential structures near the heart of the site. Small mounds, representing the residences of agriculturists and others in the lower echelons of Maya society, are scattered round the periphery of the settlement. From such a concentration of population we must assume that there exists, or existed in ancient times, a considerable area of good agricultural land not too far distant from the site. However, such an area has not yet been discovered.

While based primarily on an agricultural economy, the way of life of the people of Altun Ha differed in two major respects from that of the agricultural inland Maya groups. The coastal people augmented the usual range of food resources, including maize, beans, squash, other crops, wild game, and wild plant foods, by the exploitation of maritime resources, which provided an

additional source of protein in the form both of fish and of shellfish, especially conch. Our excavations suggest that the economic base of a coastal community such as Altun Ha was broader, and hence perhaps a little more stable, than that of inland settlements. It is possible also to see the diet of the coastal peoples as more varied, possibly somewhat better balanced nutritionally than that of the inland people, but at present we have not found archaeological evidence of greater fitness or a higher level of activity at Altun Ha than at landlocked sites.

The second difference between the economy of Altun Ha and that of inland settlements was also related to the location of the site near the sea. In addition to collecting shellfish for food, the people of Altun Ha gathered many kinds of shells for use in manufacture of beads, pendants, and other items. Much of the shell thus gathered was traded, probably as raw material rather than as finished artifacts, to inland centres such as Tikal, in Guatemala, where much Caribbean marine material has been recovered. Also, the coastal location of Altun Ha seems to reflect the importance of the site in patterns of trade along the Caribbean coast of the Yucatan Peninsula, extending not only to sites at the southern border of the Maya area, but possibly also to communities in Central America. There is, then, at Altun Ha a far greater richness of material culture than we could have expected from the size and location of the site when we began our investigations. Some of the richness may be due to the possibly more stable economic foundation, but much may be due to the population being involved in both inland and coastal trade.

Though differing from many Maya sites in some economic aspects, Altun Ha is basically similar physically to Maya centres throughout the area. The heart of Altun Ha consists of a group of five major religious structures of the pyramid-temple type. These are large, solid pyramidal substructures with, in most cases, a multi-roomed temple as the superstructure. The temples at Altun Ha are arranged around two plazas, the larger of which (Plaza A) has a north-south length of 238 feet, and a width of 200 feet. The main structures vary in height from 48 to 76 feet, and the largest has a maximum length at the base of just under 200 feet. Another major structure, 70 feet in height, lies some 700 yards south of the central ceremonial precinct, near the largest pond at the site. Between this and the site centre, as well as in all other areas peripheral to the heart of the community, lie large numbers of minor

structures. These include small temples and other structures of ceremonial nature, residences, burial mounds, and buildings of undetermined use. The total number of structures within the confines of the site is not known, and probably can never be fully determined, but we do know that the concentration of structures in some parts of the site approaches 15 to 18 in an area of 750 square yards. Although the size of principal structures and the total extent of the site are impressive, it is clear that Altun Ha was not a major centre. It probably served as the political and religious nucleus of a district of moderate size, encompassing a number of smaller satellite settlements.



Carved figurine, in highly prized translucent jade, found in Mayan tomb. Pierced vertically and horizontally. Height 5 cm., width 2.5 cm.

Since we could never hope to excavate all structures at a site the size of Altun Ha, even if such excavation were desirable, we directed our efforts at sampling as widely as possible. These included the investigation of several of the major ceremonial structures, a number of minor temples and religious edifices, the residences of families of the middle and lower strata of Maya society, a structure designed solely to contain tombs of priests, and a few buildings for which we could ascertain no clear-cut use. To date, more than twenty structures have been tested, partially excavated, or fully investigated. Of these, two will be further cleared in the 1967 season, while we shall examine at least four other buildings for the first time. By the end of the project in 1968, we should have recovered data from something over thirty

structures, including all but one of the major buildings. Though this seems a tiny portion of the whole, it will be sufficient to provide us with a reasonably complete picture of many, though far from all, facets of the life of the ancient Maya at Altun Ha.

Of the major ceremonial structures we now have data from three, plus fairly complete knowledge of the final form of two buildings on very low platforms. These, together with a third, form one border of the second plaza in the main ceremonial precinct. Each structure excavated shows a different type, both in the form of the temple or superstructure and in methods of construction, as well as in elements of architectural decoration. As is typical of most Maya sites, all the buildings are actually a series of structures, superimposed on one another. Thus one of our tasks consists of cutting through later phases of construction in order to learn something of earlier structures.

Rebuilding of temples and other structures was a basic part of Maya life, and in the case of religious construction the custom appears to spring from the Maya concept of a life span for buildings, as perhaps also for other objects. Maya religion seems to have embodied the idea that a temple or other religious edifice could be utilized for a specific period of time, after which it could no longer serve as a locale for ceremonies or sacrifices. When the life of a structure had ended, they abandoned the building, though not in favour of a new location. Instead, the now useless structure was often partly razed, and a new building erected atop the old. Occasionally the structure was modified by the addition of wings, by blocking up old doorways and cutting of new ones, perhaps by redecorating interior and exterior wall surfaces, and in other ways, so that in effect the old building no longer existed. By cutting into or removing the later phases of construction and reversing the construction process, so to speak, we are able to learn something of the changes which took place in temples and other buildings, and we often encounter in the process the tombs of the priest-rulers of Maya society cut into structures about to be capped by new construction.

One of the great problems facing the Mayanist is that of dating the phases of construction occurring in any given edifice. Since much of the material encountered in a phase consists of fill, usually at Altun Ha a mass of limestone boulders mixed with soil, it is inevitable that artifacts, primarily fragments of pottery, will be recovered from the structure. The builders could

hardly collect soil for construction without including bits of pottery and other discarded objects which had accumulated around the settlement. Obviously, though, such material is not a good clue to the age of the construction, since the pottery gathered with fill soil might be centuries earlier than the building in which it ultimately comes to lie. At most, the fragments recovered from structural fill provide a rough maximum age for the phase, since the building obviously cannot be older than the pottery it contains. We cannot, therefore, date each phase of a building with full certainty, but we have been fortunate in recovering from several of the structures samples of carbonized material, often resinous incense, from which we should ultimately be able to obtain absolute dates through application of the radiocarbon dating method.

At present, we can say with fair certainty that the final phases of all the major structures date from some time not long before the collapse of civilization at Altun Ha and the abandonment of the site centre, which appears to have occurred near the middle of the 10th Century A.D. Moving back in time from this point, we have recovered data on three phases of one of the temples excavated (Structure A-1), on the last two phases of a second (Structure A-5), and on a total of eight phases of the third (Structure B-4).

Structure A-1 is the only one of the three major ceremonial buildings investigated which is characterized by the generally typical form of such structures, having a temple of four rooms atop a stepped substructure. One unusual aspect of the superstructure is the presence of a doorway at the south side of the temple which leads out onto a narrow moulding no more than 10 inches wide. At the front of the temple the main doorway opens onto a simple frieze panel, with no steps leading down from the floor level of the temple to the platform some twenty inches below. There are indications that a wooden stairway may have existed below the main doorway, but like the tremendous range of other perishables used by the Maya, including objects of wood, cloth, and feathers, this has succumbed to the ravages of tropical humidity. Destruction of roof beams and lintels in the A-1 temple has resulted in the total collapse of the roof. Like those elsewhere in the Maya area, this was in the form of a corbelled vault, so it is not now possible to reconstruct the appearance of the upper portions of the structure.

A-1 is of interest also because it contains indications of the decadence which characterized the final activity at Altun Ha. Not only is the latest addition

to one of the access stairways a miserable attempt, utilizing blocks robbed from some other structure and set in loose black earth, but there is also evidence that the main substructure itself had begun to come to pieces, probably as a result of the pressure and stresses exerted by the temple mass. It is clear that the Maya attempted to prevent collapse of the building not with the sort of well-constructed buttressing which might have been produced in earlier times, but with masses of boulders and cobbles set in lime mortar, and left in rough, unfaced condition. Together with data from other major structures, the information from A-1 indicates strongly the decline of control exerted by the priestly caste at Altun Ha, and brings rather sharply into focus the picture of the seeds of collapse which had been planted perhaps a century or more prior to the fall of Maya civilization at this coastal community.

Cutting into earlier phases of A-1 produced data on major changes which had taken place in the form and pattern of use of the building in preceding centuries. It also revealed a tomb, typical of those encountered at Altun Ha in form and construction, with boulder walls and large, heavy slabs of flint as the ceiling, but somewhat richer in contents than some of the other tombs excavated. We came to call this the Green Tomb, due to the presence of almost 300 jade objects among the raiment of the priest interred in the crypt. Among the jades were pendants with carved representations of human figures, mythical animals, and forms combining human and animal characteristics, plus representations of actual animals, such as turtles and birds, as well as large numbers of carved and plain beads. The tomb also yielded a magnificent pair of ear ornaments, looking rather like elaborate napkin rings, made from obsidian, with glyphs, elements of the Maya hieroglyphic system of writing, carved on them. In addition, we found masses of shell objects, and 65 pearls, ranging from 2 millimetres to 2.7 centimetres in diameter. However, of greatest importance were the badly fragmented remains of a codex, or book, of which only the thin stucco wash which had coated the fig-bark paper was preserved. Such codices are extremely rare in the Maya area, and the discovery at Altun Ha, paralleled by similar finds in another tomb, is among the first from Maya archaeological sites, certainly the first published report of incontrovertible evidence of the interment of such books with priests during the Classic period, the time of the florescence of Maya civilization.

Across Plaza A from A-1 lies Structure A-5, highly interesting because of the unusual form of the superstructure, which consists of a single room running the length of the structure, having a total length of approximately 92 feet, and an interior width of only 33 inches. Excavations are continuing



Carved jade head, pierced as pendant or bead.
Height 3.5 cm., width 2.5 cm.

in this building, the major part of which is a single phase. We hope in the remaining seasons to clear more of the second phase back in time, and perhaps also to be able to investigate earlier structural phases as well. The most important discoveries made in A-5 thus far consist of two groups of large, so-called "eccentric" flints, chipped in naturalistic and partly geometric shapes, and produced for use in offerings and as burial accompaniments. The flints occur quite frequently at Altun Ha, both in caches and in tombs, but their importance in A-5 lies in the fact that they were deposited long after the structure had been abandoned, and, in fact, after the roof of the superstructure had collapsed. This indicates the presence of individuals or groups who continued to view the centre with reverence at a time when the complex ceremonial and social aspects of life at Altun Ha were no more than a memory. The data from A-5 fit into a pattern emerging from excavations elsewhere at the site, showing that, as elsewhere in the Maya area, the abandoned ceremonial centre continued to be a site for pilgrimage and worship for many centuries, perhaps up to or even after the Spanish Conquest.

Of the three smaller structures which form the southern limit of the second major plaza, we have partly investigated two. The final phase in each has been fully cleared and one of the two excavations has also yielded data on three earlier phases of construction. The more fully excavated structure

illuminates an aspect of Maya construction which had long gone unrecognized, but which is now being revealed at many sites, namely the frequently poor quality of Maya construction. It has been generally accepted that the Maya were precise craftsmen, laying out buildings with square corners and plumb walls, then finishing the walls with beautifully smoothed plaster. While it must be granted that such was sometimes the case, buildings thus constructed appear to be the exception rather than the rule. It would seem that the ancient Maya engineers and architects (for we can assume that such specialists, like specialists in many crafts, were a part of Maya society) faced the same problems which arise in the construction industry today. It suggests that religious control is no more effective than secular control in ensuring the highest possible quality in such undertakings.

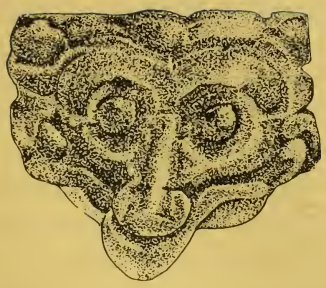
At the east side of this same plaza stands Structure B-4, the tallest of the major buildings. Here we began in 1965 a program of excavation which has yielded data on eight phases of construction and six priestly tombs. This structure, too, deviates from the general pattern, since it never included a superstructure in the form of a temple. It featured small quadrangular platform-like elements at the top in later phases, and by unusual altars in earlier times. We have now cut away entirely the last five phases of construction, which included a series of elements constructed solely for the purpose of housing tombs (Phases I through IV) and a structure topped by a round altar 9 feet in diameter at the base and 52 inches high (Phase V). The removal of this altar revealed an earlier, similar structure, and made clear the use of such altars in sacrifical rites involving burning of resin and jade objects. We recovered from around the base of the earlier altar masses of carbonized resin, plus hundreds of fragments of elaborately carved jade pendants and beads, all of them badly burned and shattered. We can only guess at the reason for sacrifices of such great import to the Maya. Jade was a material of the greatest value, but the relationship of jade to fertility and to water may indicate that the sacrifices were part of the cycle of agricultural ceremonies.

Structure B-4 has yielded more tombs than any other investigated, and has also provided the almost unique opportunity of dating the six tombs relative to one another, since each of the interments is clearly associated with a phase of construction. We are now able to recognize that each of the last six phases

of construction except Phase V contained a tomb, so that we have a sequence of tomb construction extending from perhaps the middle of the 7th Century A.D. to approximately A.D. 900 or 925. In this period the general pattern of tombs changed not at all, though the last three tombs in the sequence reflect the same sort of decline in quality of construction as in parts of Structure A-1. The orientation of the body, the placement of accompanying offerings, and the range of objects present remained essentially the same for the last few centuries of the life of Altun Ha, and in fact we can trace them in other tombs back to the mid-4th Century A.D. This indicates a high degree of conservatism, or a desire to maintain the existing pattern rather than introduce innovations in this aspect of Maya life.

Despite the general uniformity in tomb construction, each tomb has yielded objects different in specific ways from those found in other tombs, and each has also produced one or more special objects unlike anything else recovered at the site. The special objects in the B-4 tombs range from a group of large jade pendants to matched pairs of pyriform pearls nearly three-fourths of an inch in length. In the most recently discovered tomb, we found a huge jade plaque or pendant, nearly rectangular in outline, weighing one pound five ounces and eight inches long by two and three-fourths inches wide by almost an inch thick. The obverse is carved with the figure of a priest in costume, seated atop a sort of throne which embodies a semi-human face. Below this hangs a fringe which rests atop a large face with half-closed eyes, forming the bottom of the plaque. However, the reverse is the more important surface, for it contains a hieroglyphic text, a great rarity in the Maya area on jade objects. The twenty glyphs which make up the text include two dates, which appear to fall in the last half of the 6th Century A.D. Assuming the tomb to have been constructed between A.D. 675 and 725, and assuming the later of the two dates on the plaque to be close to the date of manufacture, it appears that the plaque, like other elaborate jade objects in the Maya area, remained in use for a century or more, and was interred with the remains of a priest only when it had achieved heirloom status.

As is true of most of the other elaborately carved jades from Altun Ha, full analysis of the plaque must await completion of the excavation program. However, we can now recognize a wide range of carving styles, as well as a great deal of variation in colour and texture of jade. The latter suggests that



Carved jade animal head. Pierced horizontally.
Height 3.5 cm., width 4 cm.

the jade occurring at Altun Ha may well have come from a number of sources, including not only those known to occur in the Maya area, but possibly also Central American sources. We should ultimately be able not only to link the jade with specific sources, but also to relate the stylistic variations present at Altun Ha to patterns encountered elsewhere in the Maya area. This would provide important evidence regarding the sequence of styles in jade carving.

Curiously, the most important fund of information produced by excavations in B-4 has come not from the richly furnished tombs mentioned above, but rather from a group of three tombs which were almost devoid of contents. It is precisely the lack of objects which makes the tombs of special significance, for it is clear that the absence of jades, shell objects, and the other usual burial accompaniments is due not to a change in burial pattern, but to wilfully destructive acts on the part of some group. Each of the three tombs contained, in addition to masses of soil which had obviously been dumped into the crypts, fragments of human bone, bits of shell objects, an occasional piece of jade, and sherds of pottery. In one tomb in particular, there was evidence of the burning of shell objects and jades. Virtually the only items which escaped damage or destruction were groups of large flints which had been encased in the tomb walls. Clearly, the destruction seen in the tombs could not have been the result of looting. No looter, ancient or modern, would have destroyed elaborately carved jade objects. Nor presumably would he have expended such effort in destroying all tomb contents, filling the crypt with soil, and, finally, heaving onto the soil the flint roof

slabs which had been removed to permit entry. Evidence of tomb looting in ancient times from other sites in the Maya area includes none of the sort of destruction found in Altun Ha, though there are suggestions that scattering of the skeleton might have been practised. This was done perhaps in order to prevent vengeance by the spirit of the tomb's occupant.

The logical conclusion to be drawn from the data derived from the three tombs is that the destruction was an act of intentional desecration almost certainly performed by inhabitants of Altun Ha at about the time Structure B-4, like others in the site centre, ceased to be used. In this respect, the location of the three tombs near the surface of the structure, where they could have been reached easily by the desecrators, may be significant, in that it may have determined which tombs were attacked. The act itself may be of broader significance, for if we have read the evidence correctly there is a strong suggestion that the collapse of civilization at Altun Ha was accompanied by violence. It may have resulted from a type of peasant revolt against the theocratic rulers, and possibly involved acts of violence against the living priests as well as their dead predecessors. It seems likely that a violent end did not come to Maya civilization at all centres, so that we cannot, at least at present, extrapolate from the Altun Ha evidence to produce a general statement for the entire Maya area. However, the data from B-4 do appear to shed significant light on the demise of Maya civilization in one peripheral area, and they may suggest the need for re-examination of data from other sites.

In addition to excavations in the central ceremonial precinct of the site, we have carried out investigations in outlying groups, particularly those lying south and east of the centre. Here, results have ranged from a series of three tombs, generally similar to, though somewhat less rich than, those in the major structures, and dating by radiocarbon determination from the 4th and 5th centuries A.D., to a large body of material, including pottery, burials, and miscellaneous artifacts from house mounds. They include nearly complete information on the evolution of a minor temple, now completely excavated.

The data from residential mounds include a wide range of offerings which like the tombs conform generally to a single pattern, but in each case have provided some new material. In addition to this we have collected a very large amount of ceramic material covering the period from the 10th Cen-

tury A.D. back to some time prior to the beginning of the Christian era. The earlier pieces relate to the apparent beginnings of occupation at Altun Ha, in what is usually termed the Pre-Classic. Unfortunately, the very early materials lie encased in sticky black clay, too difficult to excavate when wet, and impossible to penetrate when dry and hard. Thus we have been forced to restrict our investigation of this time level to a short period after the beginning of the dry season, when the clay layer is damp but workable. We hope in coming seasons to extend our efforts in this part of the occupation span at the site, but it appears that the body of Pre-Classic data will remain regrettably small even by the end of the final season of excavation.

From the minor temple which has been completely excavated we have recovered an invaluable range of information bearing on evolution of architectural forms. However, the major result of this work was unexpected for the temple proved to have served also as a sort of mortuary structure, housing the remains of fifty-three individuals, many of them accompanied by one or more pottery vessels. Since the burials were made in each phase of the building prior to its abandonment and the subsequent construction of a new edifice atop it, it is possible to place all of the burials relatively in time, and also to recognize contemporaneity of the wide range of pottery vessels accompanying the many burials in any given phase. Complete excavation of the sort carried out in this structure is not a usual course of action, since the amount of material to be removed in a large structure would be staggering. However, this one small structure serves as a sort of microcosm of events during the last few centuries of the existence of Altun Ha as a major centre. Our struggles with a beehive-like mass of burials have here proved eminently worth while.

Farther from the central precinct, near the one major structure lying at the border of one of the principal ponds, our excavations have produced a totally unexpected sort of information, yielded by the least imposing sort of structure. Our intention was initially attracted to a small mound lacking any indications of stone architecture by the presence near its border of a group of large stone slabs. On one of these was pecked a series of concentric circles with radiating lines, a design possibly of calendric significance. Excavation within the fill of the mound showed no link between the stones and the structure, but revealed an offering cache like those encountered elsewhere. This suggested that the

mound had been a low, stone-faced platform atop which a thatched house had once stood. Excavations outside of the facing of the platform revealed the real significance of the structure. Here, in a mass of garbage deposited by the users, we recovered a range of ceramic and other evidence which indicated that people had been at Altun Ha far later than suspected, and that they had been linked, probably by trade, with Maya settlements which were still flourishing as centres farther north in the the Mexican state of Quintana Roo.

Completion of the excavation of the garbage dump in the season just past has shown that the Maya, presumably remnants of the population concentrated around the site up to the 10th Century A.D., were still present in the 14th and 15th centuries A.D. This, together with the earliest available Spanish documentation for northern British Honduras, makes it reasonably certain that, contrary to the usual belief, there was never a total depopulation of this part of the Maya area following the fall of Classic Maya civilization. Unfortunately, our data thus far come entirely from a residential context. Therefore we cannot answer questions regarding the level of late occupation, or whether there might have been a partial renaissance in the social, political, and technological spheres of Maya life at Altun Ha in the last few centuries prior to Spanish Conquest, with the main focus perhaps in the area of the pond, rather than in the old central precinct. We hope to be able to answer such questions through excavation of the major structure in the pond area during the two seasons remaining to us. However, this will be a formidable task with the relatively small amount of time available.

In a brief summary report such as this, which compresses the results of three seasons of excavation into a few pages, hundreds of significant aspects of the Museum's work at Altun Ha must be omitted, or touched on only briefly. We must also unwillingly omit full mention of the cooperation of the Government of British Honduras and the assistance of the many who have lent their talents to the project. However, I hope that the resumé of the fieldwork presented here will serve to give those acquainted with the Royal Ontario Museum's efforts in other parts of the world at least a glimpse of the contributions to our understanding of Maya prehistory and to the broad stream of human knowledge made and yet to be made by the British Honduras Expedition.



A DINNER FOR THE AMMUNITION-PASSERS

"Average" won't do for U of T

LATE IN MARCH, founding members of the Committee of One Thousand, composed of those who give the Varsity Fund $100 or more, were invited to a reception and dinner at Hart House — and learned at first hand the importance of their role.

The broad spectrum: President Claude Bissell referred to the new era of formula financing. Under this system a basic allotment that varies with the course is multiplied by the number of students in each category for each university.

"Formula financing inevitably means the adoption of averages," he said; "and averages do not take into account the very special activities that a university like Toronto must engage in —



Professor John Crispo, left, with Rod McCabe, a key man in the New York telephone canvass, and William H. Palm. As the chart behind them indicates, there were 680 gifts of over $100 in '66, twice the number in '65, and three times the '63 total.

the basic quality of our university life."

"Money from private sources is absolutely free," he continued. "It is 'plus money'. The Varsity Fund is in many ways the best thing that has happened at Varsity in recent years, not only for what it has done and is, but for the great prospects it opens up.

"In view of your rapid growth we fully anticipate that by next year the title of the Committee of One Thousand may be a misnomer."

New frontiers: As an example of an interdisciplinary activity that Varsity Fund has encouraged since its inception, Professor John H. G. Crispo talked about the Centre for Industrial Relations, which he directs. Its main public conference this year brought together outstanding people from government, business, labour and education.

One undergraduate project: "Thanks to the Varsity Fund, about twenty Varsity language students have the opportunity each year of taking the Third Year of their course in Europe," said Professor David M. Hayne of University College, director of last year's Strasbourg Group. The University of Toronto thus becomes the first Canadian university to have a study centre in Europe, a step already taken by more than a hundred American colleges and universities.

During his fall term abroad, spent studying French in Strasbourg, the

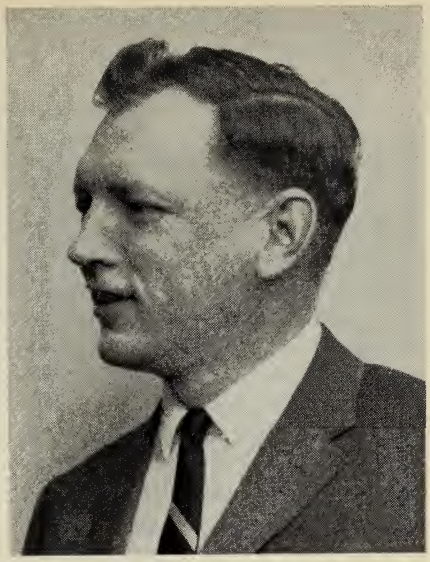
student finds himself in the "capital of Europe", for this picturesque mediaeval city on the Rhine is the seat of the Council of Europe; across the river he can see Germany, and he knows that Holland, Belgium, Luxembourg, Switzerland and even Italy are only a few hours away.

In the spring term members of the Group normally leave Strasbourg to carry on the study of a second language in another European country, "but wherever he is studying, the student experiences the excitement of life in Europe," said Professor Hayne. "The Strasbourg Group student becomes aware of the historical dimensions of European life, for around him he sees the cathedrals, castles and palaces of the Middle Ages or the Renaissance, while beneath his feet lie buried the bones of the Roman legionaries who conquered Gaul."

Returning members of the Group are enthusiastic about this Varsity Fund project because their European stay has given them much more than fluency in their chosen languages; they come back with a broader understanding of European political and economic problems, with a new respect for literature and the arts, and with a more balanced view of their own Canadian life and society.

Short, incisive talks, rather than speeches, marked the dinner.

The Chancellor, Dr. Omond Solandt, and William H. Palm, representing B. W. Ball, chairman of the Committee of One Thousand, spoke. The general chairman of Varsity Fund, Robert F. Chisholm reported a bulletin from the



Professor David Hayne is acting head of U.C. French department and the general editor, Dictionary of Canadian Biography

volunteer telephone team at work in University College, a stone's throw away. "At 7.30 p.m. they reached last year's total," he said; "and there are still six nights to go."

Bringing the event to a close, Dr. Bissell observed that while some projects will be associated with a particular division or college, "we shall try to make sure that it has a general University impact.

"I see the Varsity Fund as the federated university in action. . . . The Varsity Fund has had and will continue to have a good deal to do with the development of the Toronto image, a centre of intellectual adventurousness and excellence, and a source of pride to our graduates."

UNESCO

(Continued from page 44)

such lofty aims but with such a disparate membership, UNESCO, to severely practical minds, seems to devote undue time and energy to the passing of broadly worded resolutions of impeccable morality, with which to admonish a world of all too frail and only too human member states. Such resolutions sometimes begin with highly partisan drafts (one on eliminating the baneful after-effects of colonialism — is a hardy perennial) which by counter-resolutions and draft amendments finally are whittled down to a form which is unobjectional to the international community as a whole, or at least rendered harmless. Much tedious politics takes place — often on subjects better dealt with by the UN General Assembly — but, in an imperfect world, this is a price that must be paid for securing any international co-operation at all.

At a slightly lower level, and a far more fruitful one, UNESCO does a startling number of good things, which UNESCO uniquely can do. Only under UN auspices can the world's scientists get together without undue political complications and UNESCO has done a great deal to support the International Conference of Scientific Unions of which two Canadians, the late Dr. E. W. R. Steacie and Dr. J. M. Harrison have been presidents. UNESCO made possible the International Geophysical Year (in which Professor Tuzo Wilson played so large a part), and now has initiated the Hydrological Decade, which will mobilise a concerted effort by the world's scientists upon the problems of the lack of water in some, and the abuse of water in other parts of the world. In the field of education, UNESCO can bring together educational specialists from around the world to set up, for example, an International Institute of Educational Planning, of which Sir Sidney Caine, Director of the London School of Economics, is Chairman of the Governing Body and Philip H. Coombs is the Director.

In the Human and Social Sciences, UNESCO has brought into being or sponsors some twenty or more international learned societies and is engaged in a world survey of the state of scholarly research in their respective areas. UNESCO also plans to help build up the social sciences throughout the world and to mobilise them to apply social science techniques to solving international problems. Historians and scholars under UNESCO aegis are writing a *History of the Scientific and Cultural Development of Mankind*. Two volumes have appeared already in which reference is made to the work of several Canadian scholars. In the cultural field UNESCO's colour reproductions and books on art, and its translations of the world's classics (two University of Toronto scholars are authors represented in this series), have already an established place in the world of book production. UNESCO also sponsors the Rome Centre, a laboratory of specialists, who offer to museums across the world, scientific

advice on the restoration and care of works of art. UNESCO also framed model legislation on copyright which our Parliament in Ottawa recently legislated into law for the protection of Canadian authors.

There seems to be general agreement that the work of UNESCO is not well enough known in Canada. This is perhaps because the responsibility for Canadian participation in the various organizations of the United Nations is a federal one, while many of UNESCO's interests lie within the provincial sphere. Commenting on this aspect recently, Professor Dobson said there was a danger of UNESCO becoming the orphan child of conflicting jurisdictions. "This is a pity", he added, "for so much is happening in the international world of learning and science that is of immediate interest to Canada. And in these, to our loss, our cumbersome constitutional arrangements ill-equip us to participate. The result is that the Canadian stance in UNESCO often seems to be that of gracious donors but reluctant recipients. A not ignoble posture, perhaps, but hardly a wise one, or one that does us full credit. Surely we can do better than that?"

PROFESSOR SCHLESINGER IN JAMAICA



(*Continued from page 29*)

Association (Jamaica Branch) and appointees of the Minister of Health, Jamaica, and of the Board itself. The Hospital has 477 beds and an Out-Patients' Department in which 132,020 patients were treated in 1963.

The capital cost of the University has come almost entirely from Britain through grants from Colonial Development and Welfare Funds. The cost of buildings of the College of Arts and Science in Trinidad is being met by funds provided by the U.S.A. to the Government of Trinidad and Tobago; building started in 1964. (Canada has contributed a residence, "Canada Hall".) The site for the College of Arts and Science in Barbados is given by the Government of Barbados; the cost of buildings will be met by the British Government. The annual recurrent costs come from the various territories in the University scheme.

The supreme governing body of the University is the Council consisting

of representatives from the contributing territories, nominees of the Chancellor and representatives of the Academic Staff of the University and of the Guild of Graduates. In academic matters the University is governed by the Senate which is composed of representatives of the Academic Staff.

When teaching began in 1948 the undergraduate body consisted of 33 medical students at Mona.

The latest figures indicate a student body of 3,038 with 1,902 students at Mona, Jamaica; 910 students in Trinidad, and 226 in Barbados. There is a full-time staff of approximately 400. The male students number 1,813 and female students 1,010. There are 215 students studying for higher degrees. The main library at Mona contains 160,000 volumes.

This year the new faculty salary schedules have been announced. They are, for an assistant lecturer $3,750–$4,230 per annum; lecturer $4,650–$7,890; senior lecturer $6,750–$10,215; professor $10,500–$15,000. The University provides very good housing for permanent staff, and charges 10 per cent of the salary for rental. The type of house is related to size of family and rank. There is an excellent Senior Common Room on campus for faculty, with bar and swimming pool. There is free medical care available for faculty of the University and their dependents.

Student life at U.W.I.

There are three ten-week terms at the University. The Michaelmas Term (Oct. 2 to Dec. 17), Hilary Term

ANNOUNCING

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The Association of Universities and Colleges of Canada will administer the program.



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(Jan. 15 to March 23), and Trinity Term (April 16 to June 24). Any undergraduate or graduate student who normally resides in a contributing British Caribbean territory (Antigua, Bahamas, Barbados, British Honduras, Dominica, Grenada, Jamaica, Montserrat, St. Kitts-Nevis-Anguilla, St. Vincent, British Virgin Islands, and Trinidad and Tobago), and who has been admitted to the University is provided with a free passage on first coming to the University, and on completion of his course the student can claim a free passage home. During holidays, BWIA (British West Indian Airways) allow students half fares to their homes and return. We forget sometimes that Trinidad is 1,134 miles away from the main campus in Jamaica, Barbados is 1,152 miles, and St. Kitts, the nearest unit, is 1,000 miles away.

The annual fee for board and lodging is $510 per year, and in addition each student pays an annual student Guild fee of $25.50. The annual tuition fee for Arts and Social Sciences is $90, Natural Sciences is $120, Medicine is $200 and Agriculture and Engineering is $180. The minimum age of a student is 17 years.

The University offers Evening Courses for a General Honours Degree in Arts and Natural Sciences. A minimum of four years' attendance is required at these courses.

The students wear scarlet undergraduate gowns to formal dinner in residence, university chapel, and for lectures unless permission is granted to attend without gowns. The colour

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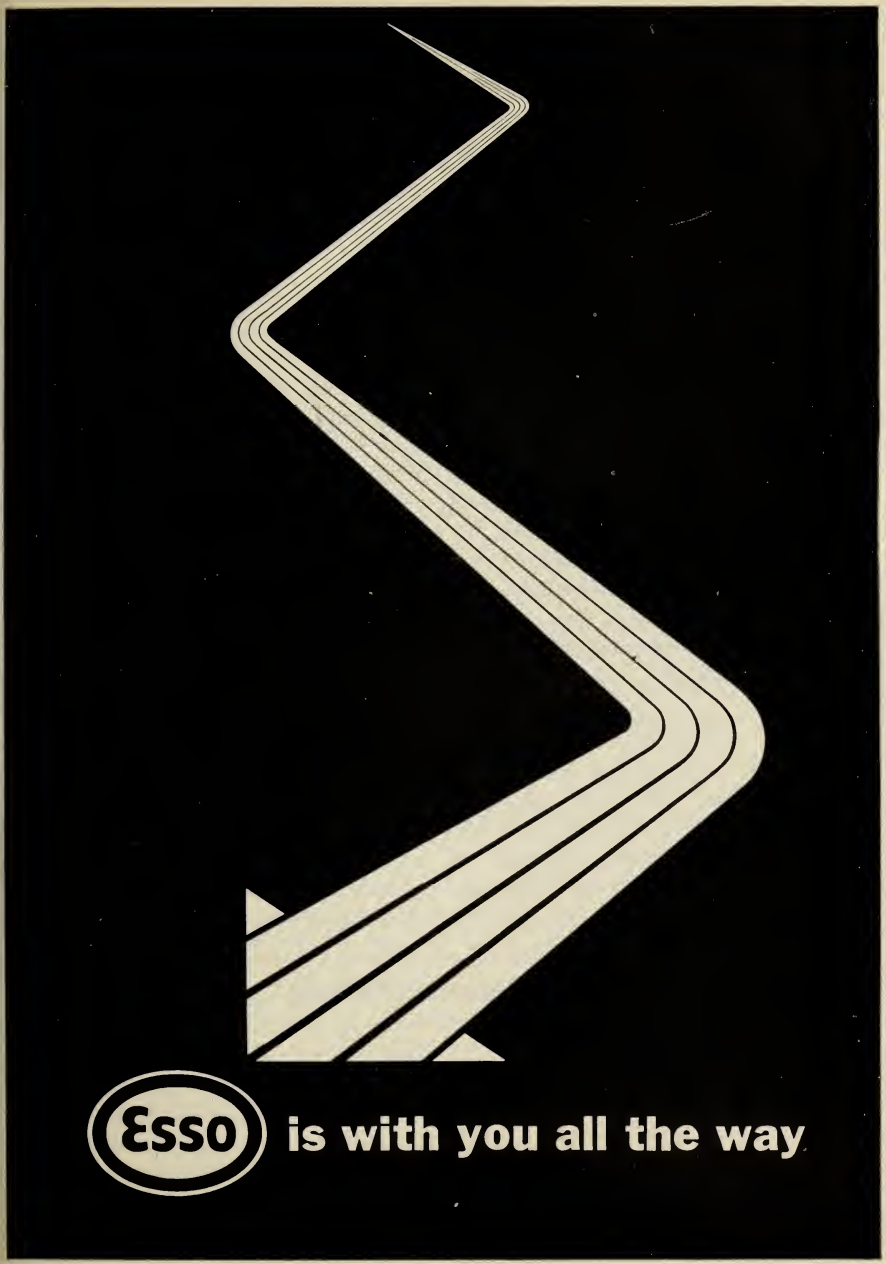
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of the gown is based on St. Andrew's University of Scotland, to which the University owes a debt of gratitude for the labours of its Vice-Chancellor Sir James Irvine, who headed the Asquith Commission to inquire into higher education in the West Indies in 1943. The present Chancellor of the University of the West Indies is H.R.H. Princess Alice, Countess of Athlone.

There are some interesting regulations for students at the University. A student who wishes to get married must obtain permission to marry from the University authorities. Application must be made through the students' Warden to the Vice-Chancellor. No student is allowed to keep or use dangerous weapons — including fire arms — on University premises. The firing of squibs and rockets is prohibited on University premises.

Canada's aid

Although Canada has for several years provided professors and lecturers to the U.W.I. as well as undertaking specific capital projects, no formal program of direct assistance between Canada and U.W.I. was in effect before July 1966. At the Ottawa Conference of Heads of Governments of the Commonwealth Caribbean countries and Canada, a program was considered and approved. Under this program Canada has promised a minimum of $5,000,000 to the University of the West Indies in the period 1966–1971.

Benefits will be shared on all three campuses of the U.W.I. — at Mona, Jamaica; Cave Hill, Barbados; and St. Augustine, Trinidad. Special features incorporated into the program will ensure that students from the Leeward and Windward Islands and British Honduras, who would otherwise be unable to attend university, will be able to do so with financial assistance. Some 25 students from Antigua, St. Kitts, St. Lucia, Montserrat, St. Vincent, Grenada, Dominica and British Honduras have received scholarships to study at the various campuses for the 1966–67 academic year.

The program will offer assistance to the University in three forms—scholarships, professors and faculty development, and capital projects. As mentioned above, 25 students will be

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offered awards for study at U.W.I. This year two U.W.I. graduates are pursuing post-graduate studies in Canadian universities; this number will be increased substantially next year. There are now sixteen Canadian professors teaching at the University of the West Indies; of these, seven are at Mona. Next year approximately twenty professors will undertake assignments on the three campuses. Several capital projects are under consideration and will possibly include a library extension, a men's residence, and extra mural centres in the Leeward and Windward Islands. It is hoped to have this new venture in Canadian assistance fully operational by the 1967–68 academic year.

This year we have seven Canadian faculty members at the University on the Mona campus, all sponsored by the Canadian External Aid Office. They teach in the departments of Geology, History, Chemistry, Medicine, Psychiatry, English, and Social Work. They come from New Brunswick, Ontario, and Manitoba (Dr. Hugo Greiner, Dr. J. Kennedy Lindsay, Dr. Cecil McIver, Dr. K. McNeely, Paul Scanlon, A. C. Voorhoeve).

The Vice-Chancellor

In the Queen's New Year's list of 1967, our Vice-Chancellor was knighted. Sir Philip Sherlock is no stranger to Canada, since he was awarded the degree of Doctor of Civil Law *honoris causa* from the University of New Brunswick on October 13, 1966. Acadia University also

honoured the Vice-Chancellor by granting him a Doctor of Letters *honoris causa* on October 22, 1966.

Life in Jamaica

Many of my colleagues in Toronto assume that we lie on the beach daily. The nearest beach to Kingston is 30 miles away. My family had to get adjusted to the "Jamaica way of life". The climate helps greatly, in that it slows you down. It has been a paradise for our three children, who go to school half days, and are learning to swim. They spend all their days outdoors, and when the sun sets at 6:30 p.m., they are fatigued and drop off to sleep. Rachel, my wife, is doing voluntary social work twice a week with the Jamaica Children's Society. We are being spoilt a little, in that our helper Maude, who comes daily from 8 a.m. to 2 p.m., cleans up the house and thus relieves us of the household tasks. Jamaicans are very friendly and we have made many friends. At a recent get-together we had a small re-union of Jamaicans who graduated from the University of Toronto. Our hostess was Gloria Cumper (St. Hilda's, '46) who is a leading barrister and social worker. The following graduates attended: John Goodin ('54–'56), who is employed by the Central Bank of Jamaica, Dr. Herman White (Medicine '57), who has opened up a model health clinic in Linstead, in the interior of Jamaica.

The social science faculty of the University of the West Indies was well represented by Percy Taylor ('58) and Dr. Owen Jefferson ('58) who

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went on after Toronto to obtain his doctorate at Oxford.

The clergy was evident in the presence of Rev. Clive Abdulla (Trinity '54), who has recently taken over St. Jude's Church in Stony Hill, about 6 miles north of Kingston. One of Jamaica's leading architects, the designer of the "Jamaica House", the Prime Minister's residence, Lloyd Shearer (Architecture '56), was also at the party. Beverly March (Social Work, '49) assistant chief children's officer for the Ministry of Welfare, and Leila Whiteman (Social Work '52) senior officer in the child care department, could not be present.

We talked quite a bit about Toronto and the "good old days" and all wanted to be remembered to Kay Riddell.

I am teaching in the social work program here, which is an undergraduate certificate, doing in-service training with the child care workers employed by the Ministry of Welfare all over the island, doing a community study with the department of social and preventive medicine, and doing some research with CUSO (Canadian University Services Overseas), a good group of 28 young men and women who work as volunteers all over Jamaica.

It is hoped that the University of Toronto will have a continuing relationship with the U.W.I. over the next few years. Dr. Hendry will be here in March to discuss further exchanges which will strengthen the social work program here, and will enable West Indian faculty and the

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Dogs and the University

Each University has certain peculiar features. I received the following memo in my office recently:

FROM: SENIOR ASSISTANT REGISTRAR (GENERAL)

SUBJECT — DOGS

From time to time we have trouble with stray dogs roaming the College premises destroying property and generally making a nuisance of themselves. To rid the University of this nuisance steps are being taken to catch such dogs and hand them over to J.S.P.C.A.

Since it is not possible to distinguish stray dogs from those belonging to Householders, members of staff are advised to attach to their dogs Collars with appropriate labels to prevent them being despatched in the manner set out in the above paragraph.

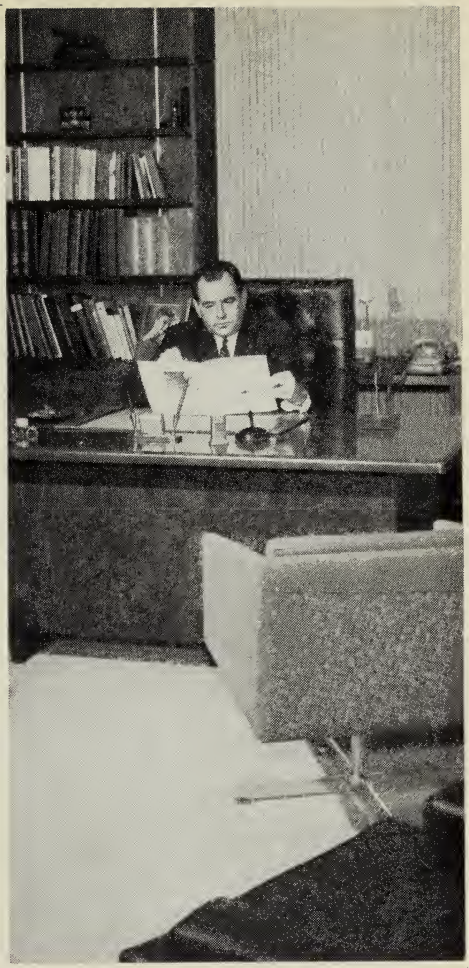
It is not inappropriate at this time also to remind householders that unless they secure their dogs at night they create a nuisance by constant barking. Several complaints about this barking of dogs have been received in past weeks. You should know too that it is a well accepted fact — certainly in Jamaica — that dogs are more useful as guards if kept inside the house: left outside the professional burglar easily disposes of them by poisoning.

For your own safety therefore, as well as the wellbeing of our Campus Community you are earnestly requested *not* to leave your dogs at large at night.

I must admit as I read about the cold spells in Canada in the local paper, that I do not envy my colleagues at the University of Toronto. They have to bundle their children in snowsuits, snowboots, and mittens, shovel the snow off the sidewalk, and put up the heat.

Well, I have to go now, a fresh ginger and rum will do no harm before dinner, how about a swim in the pool! The date: January 19, 1967.

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Varsity Fund Telethon hits a new high

As Robert F. Chisholm, general chairman of the Varsity Fund, reported to the new Committee of One Thousand (*page 113*), this year's phone canvass of alumni in York, Halton, Peel and Ontario counties showed a substantial gain over 1966. A few of the alumnae and alumni who kept more than a hundred telephone lines humming from University College East Hall may be seen above. A fresh team went into action each night. Altogether, more than 2000 volunteers were involved.

In the foreground with Mr. Chisholm is Dr. R. D. Leuty, Dents '47, *left*, who headed the 1967 Telethon supported by W. H. Broadhurst, St. M. '51. The silver-plated telephone for the division with highest percentage of phone pledges was won by Physical and Health Education.

ARSITY

GRADUATE

NIVERSITY OF TORONTO SUMMER 1967



An 1867 portrait of University of Toronto (*bottom*) and the now Federated Universities: Trinity (*top*) on Queen Street, Victoria, at Cobourg, and St. Michael's, on present site. In 1967 the Federation starts its greatest single project, the Research Library pictured on Back Cover. *See page 27.*

there's more to CGE than most folks see...

For instance, even as you scan this message, research and development teams serving our 22 CGE plants are seeking, not only to improve our existing products but are exploring many fields of potential promise. Some of these areas of interest are as dissimilar as chemical and metallurgical, hydraulics and electronics, heat transfer and aerodynamics to mention just a few.

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VARSITY
GRADUATE

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June 1967

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Marshall McLuhan, who is spending next year at Fordham University, will continue to edit *Explorations* for VARSITY GRADUATE.

VARSITY GRADUATE is published four times each academic year by the Department of Information, Simcoe Hall, University of Toronto, Toronto 5. Printed at the University of Toronto Press. Authorized as second class mail, Post Office Department, Ottawa, Canada and for payment of postage in cash. Subscription price $2 a year, $5 for three years.

The Editor of VARSITY GRADUATE is Kenneth S. Edey, director of the University's Department of Information. The other members of the department are Lawrence F. Jones, assistant director; Leonard Bertin, science editor; Crawford Grier, humanities and social sciences; Mrs. Winogene Ferguson, information officer, and Mrs. Doreen McMeeken, production supervisor.

Other periodicals published by the Department of Information are VARSITY NEWS, in October, December, March and May for graduates and former students; and STAFF BULLETIN, eight issues each academic year.

Requests for rate cards and other information about advertising should be addressed to Mrs. Jean Balint, VARSITY GRADUATE's advertising representative, at Department of Information, Simcoe Hall, University of Toronto, Toronto 5, Telephone 928–2104.

The more change the less change

By coincidence, not design, this issue of the magazine has acquired an old-home-week flavour. In several particulars it is a throwback to the birth of VARSITY GRADUATE in March, 1948, and the eleven issues that comprised the first series.

As the backbone of the original writing staff, Allan Anderson produced two or more articles an issue. His by-line, now recognized as a concomitant of excellence by CBC radio listeners, is on page 41, its first appearance in the GRAD since we suspended publication in May, 1950.

(Our next most prolific contributor was Dr. Gregory Clark, who never once during his brilliant career has ignored an SOS from his alma mater. There were others in the founding group whose names would have been ornaments for any editorial masthead: Wilfrid Sanders, Gerald Anglin, Norman DePoe, Morley Callaghan, Claire Wallace, Jim Coleman, Ted Reeve, Dorothy Howarth, Kenneth McTaggart, Arthur Ford.)

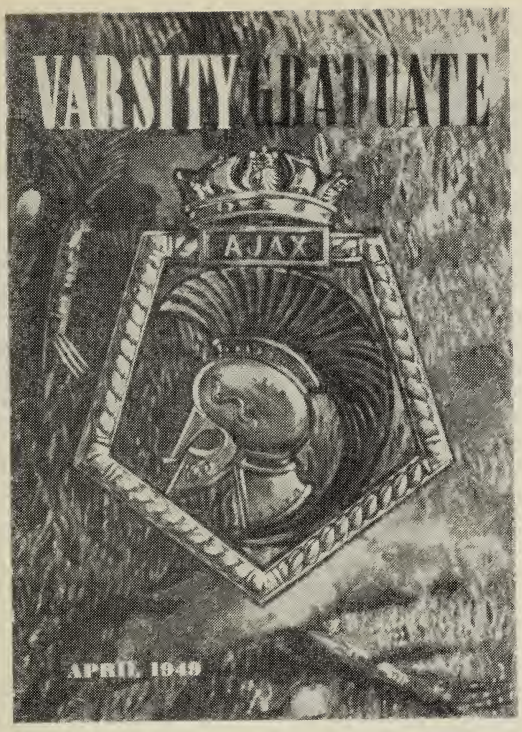
In Allan Anderson's category as a principal midwife was Eric Aldwinckle. The talent and imagination of this artist-typographer won him (and VARSITY GRADATE) the Toronto Art Directors' award for distinctive merit for editorial design. The opportunity to use one of his recent paintings (Front Cover) coincided with the scheduling of a U of T flashback by Peter Newman, Ottawa editor of the *Toronto Star* (facing page). The obvious illustration for Mr. Newman's piece was the Aldwinckle cover for April '49. This commemorates presentation to the University of the crest that H.M.S. Ajax carried on her forward gun-turret in the historic seafight with the German battleship, Admiral Graf Spee.

After eight years in limbo, VARSITY GRADUATE was revived in 1956 under the editorship of Crawford Grier who guided it skillfully through two transitory stages. In 1959 he turned it over to Department of Information, its first and present publisher, where VARSITY GRADUATE was restored to the original format.

* * *

Department of Information has had as many lives as the magazine itself. Winogene Ferguson is the only staff member with uninterrupted service since the first GRAD came off the press. For one five-year period she *was* the department, editing *Staff Bulletin*, writing news releases, coping with inquiries, typing her own letters, running her own messages.

In the context of these meanderings, it seems fitting to conclude by drawing attention to Mrs. Ferguson's contribution to this issue, the leading article (page 11). We advise you not to pass it by. *KSE*



Memories of a Jaxonite

Peter C. Newman

Seldom in its history has University of Toronto created as unique an institution as the shanty-town campus at Ajax, 25 miles east of Toronto, where eight thousand engineers were trained during four hectic years after World War II.

Future histories of higher learning in Canada will allot little space to the accomplishments of Ajax. It was, everyone admitted, a temporary expedient, and far from perfect, though surprisingly successful.

The two decades which have passed since the suspension of teaching at "University of Toronto, Ajax Division" have dimmed some memories for its graduates. But to those of us who walked its drafty corridors, Ajax remains an unforgettable experience.

Ajax, to those on the inside, was the weekly Sunday night trek in from

the bus-stop on Highway 2. It was the sudden spit from the exhausts of the black steam pipes which heated the buildings, and that memorable house party, when somebody always pushed his head through the cardboard common-room wall, and no one could pull him out, because he had such big ears.

It was the unchallengeable certainty in the voice of the neophyte civil engineer, who claimed at 2.30 a.m. on the night before his final dynamics examination that he had finally foiled gravity and all its forces. It was the three-times-a-day line-up at the cafeteria, and the shaggy red setter that became a student hero by refusing to eat cafeteria meat balls.

And Ajax was that final night, when you left for Toronto never to return, and in spite of yourself — looked back.

Ajax was created as a result of the postwar deluge of veterans anxious to become engineers under the government's DVA (Department of Veterans Affairs) financing provisions.

During the Summer of 1945, University of Toronto administrators were faced with the dilemma of having to provide accommodation for twice as many students as had been enrolled in the previous academic year. To cope with this unprecedented influx, the University leased part of the shell-filling plant at Ajax, Ontario, operated during the war by Canadian Arsenals Limited.

Ajax was quickly converted into a self-contained campus. The machine

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tools were moved out, partitions built and desks and laboratories installed. The barrack-like structures where the munitions workers had lived became University residences.

Ajax Division operated for four years. By 1949, the cascade of incoming veterans had subsided and two new engineering buildings became available downtown.

The Ajax campus consisted of 446 acres and 111 buildings. It was a shanty town clad in gray eminence.

The low-slung, almost desolate structures which housed the students and the lecture rooms suggested usefulness rather than comfort. Every building, it was quickly apparent, owed its shape only to symmetry and thrift.

The residences were U-shaped huts. The two forks of the U held 25 rooms each (with two student engineers per room), while the cross-bar was occupied by a battered common room. The 35 residences were differentiated only by the small, black identifying numbers above each grey door.

There was also a miniature but well-equipped Hart House, a large "Rec" Hall, a post office, a barber shop and a few small stores.

Dragon on wheels

The fact that the shell-filling plants which had been converted to classrooms were placed a considerable distance from the living quarters for safety considerations, gave birth to Ajax's strangest creation. This was the Green Dragon – nickname for the converted trailer which linked the two

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areas. These monstrosities were huge, springless, over-crowded and under-nourished vehicles which provided little comfort, but much amusement.

Ajax was a daring and successful experiment in educational democracy. Every major non-academic decision was made by the students themselves. Each residence was a separate state, ruled by those in it. Staff supervision was at a minimum.

The process of turning ordinary human beings into engineers required 32 hours of lectures a week at Ajax. Most students got up about 7.30, often jarred awake by the strategically-timed clanging of hot-water pipes. Dress was informal, mostly consisting of old army fatigues over a sweater. At about ten seconds to nine, the entire student body would attempt to push aboard the last run of the Green Dragon bound for the lecture rooms.

One third of the young engineers' time was spent in the laboratories, where experiments were supervised by staff demonstrators. These miniature Mohammeds were the guiding light of many lost souls, muttering with seemingly inexhaustible patience: "Why don't you try it again?"

After an hour off for lunch and an afternoon of more lectures and lab work, the official day was abruptly climaxed by a cafeteria supper.

Weekday evening activities for most of the Ajax men were limited to studying. There wasn't much time to waste at Ajax. Nearly all the veterans regarded their curriculum with an earnestness now seldom seen on the campus.

But there were some alternatives to spending the night over textbooks. The Ajax Hart House conducted art classes. There was a bridge club, a chess club and a remarkable choir.

The academic accomplishment of Ajax was to provide the emergency facilities for the basic training of eight thousand University of Toronto engineers. But there are no statistics for the many friendships begun at Ajax, and all the many good times had by those who ever were "Jaxonites".

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Peter Newman studied mining engineering at Ajax for two years, then proceeded to a B.A. (Victoria) and Master of Commerce degree. He is the author of *Flame of Power*, 1959, Longman's, and *Renegade in Power*, 1963, McClelland and Stewart. His Ottawa column for the *Toronto Star* appears in a dozen newspapers.



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The Dean of Food Sciences returns from a northern tour of duty with fresh respect for a people whose alert minds and good humour are being tested by a new effort to keep them warm, dry, alive and well

After the igloo a slum but the trail leads on towards a better life

BARBARA MCLAREN *interviewed by Winogene Ferguson*

"SOME ESKIMO YOUNGSTERS go south for their schooling. And when it is over they think of their parents living in hovels – so they don't want to go back. When the family lived in an igloo the mother was the kingpin. The father – the hunter – was essential. Now, even the teenagers who stay home can make money for their own purchases at the Hudson's Bay store. It is sad to watch the breakdown of authority in the family, sad to discover that some children are ashamed of their parents."

In this way has Dr. Barbara McLaren, Dean of the Faculty of Food Sciences, sketched in a very human aspect of a problem that resulted in six spirited and resourceful ladies fanning out through the Canadian north in January. The Dean was one of them.

In April, shortly after Dr. McLaren's return, we talked in her office at the corner of Bloor Street and Queen's Park. Mingled with the usual Faculty papers on her desk were new items – sealskin ookpiks, Eskimo carvings and stacks of coloured slides.



Dean Barbara McLaren

"The Department of Indian Affairs and Northern Development — with Central Housing and Mortgage Corporation as a partner — is experimenting with pre-fab houses for Eskimo families," she said. "They are trying to educate Eskimos in the art of living in such places, improving them, making them into homes their children will be proud to show off to new friends from Ottawa or Montreal.

"It seems certain that good houses properly used would sharply reduce the high death rates for infants and their mothers — and generally improve the health of the Eskimo people. This is an enlightened concept. But it will take a bit of doing."

When the Department asked Dr. McLaren to join in the effort and operate as a one-woman task force at Frobisher Bay for 10 weeks the

chances for research in several of her fields encouraged her to accept.

Frobisher, the "capital" of Baffin Land, has a population of about a thousand Eskimos in winter and half that many again in summer. The white population is around 500. It has three distinct sections.

Apex, where most of the white community live, has many good houses and a few that are deteriorating badly.

Three and a half miles away is Ikaluit, the native suburb — where Dr. McLaren would live. In a recent issue of *The Beaver*, P. D. Baird, an acknowledged authority on the north, called nine-tenths of Ikaluit our major Arctic slum.

Half a mile from Ikaluit is the airfield and large Federal Building which the U.S. Air Force sold to Canada for $1 when it moved out in 1963. The Federal Building houses the Department's rehabilitation centre and Eastern Arctic headquarters.

Frobisher has hydro power, telephone service, a CBC radio station broadcasting in English and Eskimo, a store and commissary owned by the Hudson's Bay Company — and a liquor store.

Dr. McLaren's northern adventure began with two weeks of briefings at Ottawa. There she was joined by the five women who would spend their ten weeks at smaller communities: Broughton Island, Igloolik, Arctic Bay, Cape Dorset, Pond Inlet.

One was an M.A. from Laval who had done social work in Japan, one a nurse who had worked in the Western Arctic, another a U.B.C. graduate with first-hand knowledge of the north, another an airline stewardess. The fifth was a Toronto housewife with five children.

Why the last choice?

It had something to do with an experiment in Australia, [the Dean replied]. As I understand it, the Australians found that some people with no professional training could do this kind of a job well. So Ottawa decided to try it.

Could we call you one of the pioneers of Eskimo housing?

Oh, no. Indian Affairs and Northern Development has built up quite a backlog of experience. First they tried what was called the Rigid Frame House, a one-room affair far too small for Eskimo families which are usually large. Then there was a government-supported co-op run by the Eskimos themselves which didn't turn out well. Then came another kind of house which the government equipped with refrigerator and washing machine. That didn't work either.

Now they're trying a low-cost, prefab, three-bedroom house with living room, kitchen complex, bathroom (with chemical toilet), and a cold room. The only furnishings are beds, two wardrobes, a kitchen table, chairs, an oil stove and an oil space-heater.

Thirty of these houses were earmarked for Frobisher. Twenty-nine arrived, one of them for me.

Did the Mad Trapper steal the thirtieth?

I rather think something happened when they were unloading the ship.

It's probably at the bottom of Frobisher Bay.

The houses are given to Eskimos?

They're rented. Tenants who work regularly — a low proportion unfortunately — pay $67 a month. That's about two-thirds of what the rent would be for a self-supporting operation. Water, oil, garbage collection and sewage disposal are free. Electricity over a fixed maximum must be paid for.

The rent for a tenant with no fixed income — a hunter, carver or part-time worker — is about $30. But everyone has to pay something. Even a "welfare case" has to pay $2 a month. The Department is firm about this. It's a hard concept to sell to the Eskimo who has some distrust of government anyway.

And the Eskimo woman moving from one of the earlier houses can't for the life of her understand why she can't bring along the refrigerator and washing machine to which she's grown accustomed — why she should be expected to buy her own.

So, you see, people with assignments like the one I've been on have their work cut out for them. Their job is to get the Eskimo family moved, settled, satisfied — and in a mood to start adding to the furnishings and in other ways improving the new home. The government offers incentives. For each improvement a family are given credit which will reduce the price if and when they want to buy their home.

I suppose your house was fancied up a bit?

I got exactly what the others got—all part of the plan's psychology. Mine was the demonstration house. I was to teach by doing, to set a good example. Oh, I did have one extra piece of furniture, a desk. The southern Canadian who was in charge of delivery decided it was impossible to get it through the door. He stuck to this when his Eskimo helper and I suggested taking the door off its hinges and turning the desk on its side. But reason finally prevailed. It seemed to me the bossman should have had the heavy end of the desk and the Eskimo should have been in charge.

You found the Eskimo intelligent?

Intelligent. Astute. They're adept at doing things, very mechanically inclined. And while they're nice to get along with, you don't put a thing over. It was clear they thought me awfully nosey at times.

Eskimos have a hilarious time joking among themselves and their humour can have a bite to it. I was told of a Nativity scene in one of the settlements last Christmas. Dolls representing Jesus, Mary and Joseph were dressed in the traditional way. But three other figures were in present-day business suits and had brief cases — "three wise men from Ottawa," an Eskimo explained.

They're a wonderfully kind and generous people. A big Eskimo family with a small house will cheerfully let a second family move in with them.

Here's a picture of a woman who had to be flown to Montreal for a stomach operation. A neighbour



IN THE LIVING ROOM A CRIB

adopted her infant son. After her return the boy stayed on with his foster parents while his real mother had two more children of her own. When her sister died, she adopted two more. They do this.

And some of them are beautiful. Look at this girl with her black, black hair and light skin. I had thought of Eskimos as very swarthy, had not realized how light-skinned they are. And here's a picture of another lovely girl. This one is 20. She's had two illegitimate children.

Is there much illegitimacy?

Oh, yes. And often one of those nice white men who go north is the father.

You say nice but mean the opposite?

Well, certainly at Frobisher, there's a tremendous turnover in the white community. It's very unstable. Among young people the average stay is from 18 months to three years. A lot of the young women come up for a little excitement and a husband. It seems to me that too few of the temporary residents show a real interest in creating a better community. At other places where people stay longer there are more comfortable relationships between Eskimos and Canadians from other sections of the country.

What about those who have gone to Frobisher and settled down?

I only knew three families. The others ignored me. I imagine they thought of me as just another person Ottawa had sent to play around with the Eskimos who had been played

around with enough. The name of the program – Home Economics – gave the wrong impression. That probably labelled me a cooking teacher. Community Development would have been a better name for the job I was doing – and it's a job for people who can stay long enough to be truly effective and establish the right relationships with Northern Development officers and the Eskimos.

So many things need doing. The importance of nutrition should be pointed up in the public health program, for example. There's a gap to be bridged between the job placement service and Eskimos who should and could be working regularly. Too many Frobisher teenagers who have finished with school are loafing at home. Some of them could be at Churchill, learning a trade. The way has been cleared for this, but someone has to take the initiative in getting them to apply.

In the north as here, teenagers can be a problem. I would be in an Eskimo home asking questions when a teenager would say to his mother, "You don't have to answer that!" Whereupon my interpreter would snap back in Eskimo, "You just mind your own business".



One of the new homes

You needed an interpreter?

Indeed I did! Among the families I worked with, about the only adults who spoke English were those who had been sent away to a sanatorium to be treated for tuberculosis. That's where they learned the language.

Enosil, the little interpreter assigned to me — she lived with me — was packed off to a sanatorium when she was six and stayed several years. There is still a lot of tuberculosis to contend with, which is one of the reasons for the housing program. The Eskimos stand a much better chance of resisting the disease if they live where it's warm and dry rather than in an igloo or a tent.

Tell me more about Enosil.

She's a bright youngster, an orphan whose parents died young. But she has half-brothers, adopted brothers, step-brothers. She told me about all of them and would get quite exasperated when I forgot which was which.

Was she good at her job?

Oh, I think so. She had a Grade VII education. However, when the subject was nutrition, we were dealing with concepts that could be difficult for anyone at that level of education to cope with, let alone translate into another language. There was no way for me to check on whether it was coming out right.

With so much to do and so little time, I worked Enosil hard. Sometimes she would leave me high and dry. She had the Eskimo's ability — which we in the south might develop with profit — of just sitting down in a corner and going to sleep. I would have a meeting scheduled and Enosil wouldn't arrive. When I telephoned she would reply "I'm asleep" and hang up.

Fortunately, I had substitutes — the Lucassie children, 10-year-old Charlie and his sister Neevee, who was nine. They were good, too.

Graduates of a sanatorium?

No, they're part of the new wave of Eskimo youngsters who are learning English in a regular school. This has been going on for five or six years. The language barrier won't exist for future generations.

They speak well?

Fairly well — the trouble is they speak only Eskimo at home and they think in Eskimo.

These youngsters will go to high school?

They hope to go to Grade XIII. White children go that high.

Hope? Are the races treated differently?

Well, they go to the same schools, but there is a little trouble in terms of integration. The Eskimo children start right out in Grade I learning English as they go. Naturally they are slower than children from English-speaking homes and this has led to segregated classes — the last thing the government wants.

Just to complicate things further, Mr. Simonee of the Territories Council is pressing hard to have Eskimo children taught in their own language for the first three years. As he is one of two Eskimos on the Council, and the first to be actually elected, what he says carries weight.

The big drawback to the Simonee proposal is that teachers qualified to teach in Eskimo can't be found. The odd one might come from the Western Arctic but the syllabics, the dialects, are different and this would cause confusion.

The houses – what are they like?

They're not Taj Mahals! They're low cost housing. But they can be made to work. Some things surprised me – a picture window in the bathroom, for example. The room was 48 inches wide and the window 44.

Two designs were used for the houses under my supervision. One was quite good. The second had the water tank in the uninsulated cold room – this in a region where temperatures of 40 or 50 below zero were common. At Frobisher, water deliveries are made two or three times a week. This second design provided no room for a hand basin in the bathroom.

Ice forming on the inside of walls was a problem. This was corrected when we stopped the cold Arctic air pouring in around faulty outlet pipes and improved the insulation by packing the foundations with snow. Flooding was caused by one outlet pipe that ran uphill and froze. That was fixed, too. We finally stopped the windows from icing up by putting a fan on a high shelf near the space heater. The Hudson's Bay people were much impressed with that refinement. Now they've ordered fans the Eskimos will be able to buy for the same purpose.

What about furnishings?

One of the first things we initiated was a clothesline for diapers over the bathtub. The Eskimos had them hanging and dripping all over the place. Then a medicine cabinet – sorry, said the Department, no medicine cabinets; you'll have to improvise. Shelves in the bathroom were the obvious answer. We put them high up so children couldn't get at them. Headache pills are one of the great killers of children. We introduced the shelves to our Eskimo families with a lecture on drugs, the good they could do – and the harm, especially to children. We made it quite academic.

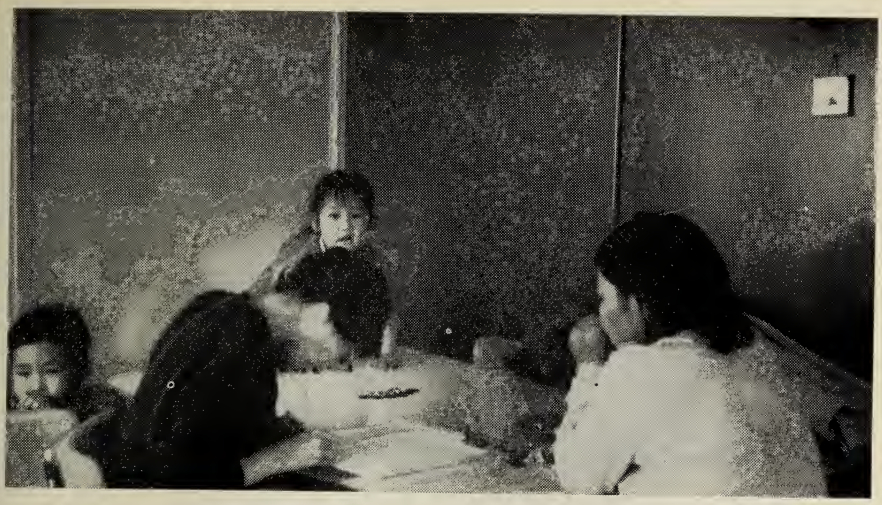
Enosil was a strong ally on such occasions. We had another good one on fire prevention and how to use the fire extinguishers the Department provides. Most of what I said was new to her so she translated with interest and enthusiasm. An older and more sophisticated interpreter, let's say a missionary's wife, would have been more matter-of-fact.

And the Eskimos responded?

Respond? Indeed they did. We established a good relationship with all our families.

One Eskimo called on me when I was waxing the floor on hands and knees. He went right over to the Hudson's Bay store and bought his wife an electric floor polisher.

But I was never allowed to forget that Eskimos have minds of their own. This was pointed up right at the beginning. The man in one of our houses protested he could not do the things I suggested. He had to work five days a week. The weekends were for hunting or fishing. Yet the next



ENOSIL COMPLETES A QUESTIONNAIRE

time I called he had built all kinds of cupboards. The place was shining.

The cupboards are important. Eskimos don't like the wardrobes that come with the house. They usually move them into the living room.

It's true they haven't too many changes of clothes. Underwear is far from a must. But they need some place to stow things, including bedding. Our suggestion that future houses should have built-in bedroom cupboards – fairly high so children can't get at them – was favourably received at Ottawa.

Was advising Ottawa part of the job?

Oh, that was established during the two-week briefing session. You know the liveability code that Professor Leitch of our Faculty has been developing for Toronto housing? She holds a degree in architecture. Well, it seemed to me that liveability standards should be set for Eskimo housing, too. I was supported in this by Monique St. Hilaire of Laval, who drew Igloolik as her assignment. And Ottawa bought it. Their whole idea is to make this housing experiment work – and work well. Little things can be important. Hooks for parkas. A rack behind the water tank for brooms and mops. A place to keep dishes and silver. Paper towel dispensers in kitchen and bathroom. When you go into a house and find one wash-cloth serving a whole family, all suffering from impetigo – or a leaky water tank plugged with an old floor-mop – you begin to understand the importance of health education and things that go with it.

Is there much sickness?

Babies suffer most. Frobisher has an excellent new 28-bed hospital.



THE DEAN AT HER FRONT DOOR

Women go there to have their babies. Expectant mothers are flown in from other communities so babies will get a head start. Yet the overall survival rate for Eskimos is only about 24 years. If you leave out babies up to age one the rate jumps to about 49 years. It's appalling.

What's the reason?

Small babies in damp living conditions. They just die. A lot of the mothers seem to be anaemic so perhaps some of the babies don't start out with the six months' supply of iron that is normal. Tuberculosis could be a factor, too — encouraged by sleeping in igloos and tents and some of the poor houses that are so cold and dreary. It's such an involved problem, one of many that could not be studied adequately in 10 weeks.

We put emphasis on sanitation — the need to boil drinking water, for one thing. We tried to promote paper handkerchiefs. I saw so many runny noses up there — including mine. We found that what advertising people call the soft sell worked best. To a large extent we taught by example.

No cooking lessons?

There's that cooking business again! Learning to cook meat has

done the Eskimo more harm than good. Raw meat has Vitamin C. Cooking destroys it. Fortunately, many of them still eat their meat raw.

No vegetables?

That reminds me. The kitchen stoves in these houses – the oil stoves – have one burner on top with the rest of the surface getting diffused heat. How do you cook a dinner of meat and vegetables for a big family on a thing like that?

The oven is small, with one place for a rack half way up. Put muffins on the rack and they burn on top. Put them on the bottom and they won't cook at all. We showed our families how to cut tin cans so they'd support the rack at the right height. We taught them to bake bread as an alternative to bannock – flour, lard, water and baking powder – which they cook on top of the stove. We showed them how to step up the protein in their bannock by adding a little milk.

I've turned in a rather full report on the stoves. Where electricity is available, as in Frobisher, a plain electric stove with four burners and a fair-sized oven would be best.

Is there a good variety of food available?

They have cariboo, seal and some bear. In summer they catch fish. As for other things, the choice is limited compared with the way we shop – but the Eskimos were passing up many good things that were available. We'd buy them, bring them home and mark the prices on them. The Eskimos would note what we were doing and often follow suit. That was the way the Department wanted us to function – and it worked.

In the main I stayed away from lecturing on how to cook and instead talked about nutrition in general terms. Eggs are about the best buy on the market – little tiny fellows but only $1.35 a dozen (compared with $1.58 or $1.60 for one stalk of celery – not a bunch – a stalk – and pretty limp at that). I didn't urge them to buy eggs or show them how to make omelette chasseur or eggs bonne femme. I merely pointed out that an egg will hatch into a chicken, that it has everything. So they began buying eggs – in quantity.

There were situations in which I had to be more specific. One woman was widowed when her husband came south to a sanatorium, went swimming and drowned. She was left with seven little children and a blind father to feed. I helped her to work out a budget and did what I could to get her allowance increased. I got her on to buying skimmed milk powder at a third of the cost of the variety she had been using. This news got around and soon others were saving money on milk, too.

Did you ever do anything about that picture window in the bathroom?

Oh, draperies, of course! Draperies were one of the most important items on the agenda. Enosil and I got started on them the very first day. We marched off to the Hudson's Bay store for rods and materials. And Enosil found an Eskimo woman who put in two 16-hour days with an old-

fashioned sewing machine she cranked by hand. We wouldn't have had a very good demonstration-house without drapes.

By the time I left, the Hudson's Bay store was sold out of both rods and materials. There won't be any more till the sealift begins in July.

Did you travel by dog team at all?

No. There aren't as many dog teams as there used to be. They go in for Skidoos now, taking an extra engine for the long trips. If you have only one engine and it breaks down you can be in real trouble. And when there's a white-out you can't give a Skidoo its head and trust it to get you home the way the dogs will.

Any igloos?

One. Three school teachers were talking about how they'd like to try living in an igloo, so an Eskimo who was present said he'd build them one. And he did. The girls spent one night in it – in sleeping bags.

How about recreation?

No television, of course. But movies are very big in Frobisher. There's a new movie house in Ikaluit with two shows a night and change of program every day. And there are church socials, and dances – they go-go and do the Frug, just like other Canadians.

Things have changed so much for the Eskimo. His never-ending battle for survival with the elements is pretty well over and he stands with one foot in our kind of civilization. I think he gets mighty bored sometimes. This may be one of the reasons why he puts so much into carving – why he excels. All of these things I've brought back with me: a critic might not call them classics. But I think they're wonderful. They weren't created by the top artists – they were all made by neighbors of mine. Here's a bear created by my friend Mr. Lucassie. See how it stands on its hind legs with perfect balance. How did Mr. Lucassie figure where the centre of gravity was? It seems to me something could be done to provide more outlets for this kind of talent.

What comes next for your new friends at Frobisher Bay?

Gradually I think they will acquire more control over their own destiny. The key is language. Leaders will emerge as more of them become educated, especially in English. But this can't happen overnight.

In economic terms, Frobisher is a problem. One wonders if enough industrial activity could be created there to support a growing population. The place is so isolated. The navigation season is so short.

I heard some talk about a migration to Labrador. There should be a great many jobs opening up when they go ahead with the Churchill Falls development. If that happens there will be strong arguments against the men going and leaving their families and parents behind. So there seems a chance of a big shift for the Eskimo population.

* * *

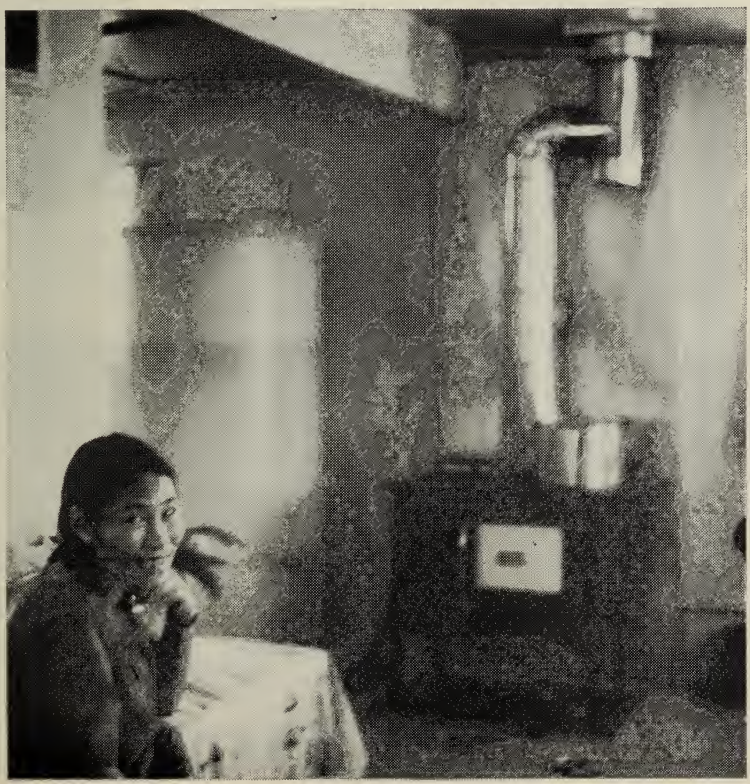
The time had gone quickly – but it had been a long interview. As we sat back and sipped coffee, I asked Dean McLaren if she'd like to go back

sometime and see how her 28 families were making out. "The number is 16," she corrected me. "The last 12 were moving in as I was moving out; it seemed best to let my successor start with them from scratch."

"Of course I'd like to go back, maybe in a year," she went on. "I'd like to go in summer when the wild flowers are out. They say the place is a blaze of gorgeous colour."

"And in the meantime," I reminded her, "you'll be getting interim reports from Enosil."

The Dean smiled a little wryly. "Enosil? Shortly before I left, we had a visitation from a radio team that was making tapes for broadcast in France. Enosil found two Eskimo hunters for them and we had an interesting time working in three languages. When the visitors were packing their gear they complimented Enosil on her extraordinary ability, good looks and charming manners. They wondered why she was not a guide at Expo. When they left, Enosil went, too. I never saw her again."



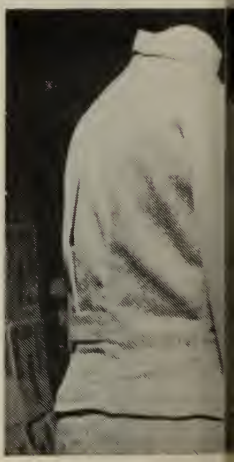
Dean of Food Sciences (II)

An enlightened approach to living . . .

Home from Frobisher Bay, Dean McLaren picked up the threads of her absorbing job in a lively, progressive division based solidly on two branches of science: *ecology*, which deals with inter-relationships of an organism to its environment; and *euthenics*, which is concerned with the development of human well-being and efficient functioning through improvement of the environment. The 61st and final class in Honour Household Economics graduated in 1966. The first Bachelors of Science (Food Sciences) graduated this May 29.







Above: Miss Irene Myskiw shows her parents a model built by fourth year students to illustrate a nylon 66 molecule, one of a multitude of exhibits at this year's open house. The students make nylon and other fibres in their labs. Then they design and make clothes from such materials (exhibit at *right*).



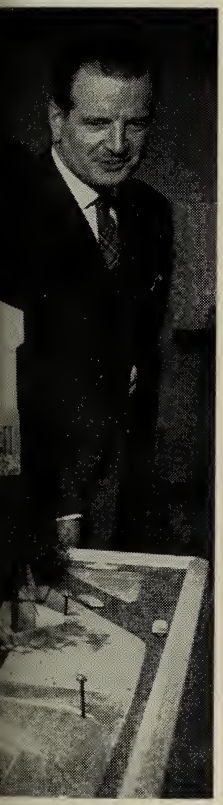
Above: Is too much cadmium a factor in high blood pressure? Is too little chromium a factor in diabetes? In the Faculty of Food Sciences, students do nutrition research along these lines using fruit flies (the specks in the test tubes).



The U of T Library's co-operation with other Ontario Universities ranges from creating collections for undergraduates to providing the finest facilities for graduate research



Above: President Claude Bissell inspects a model of the research library which should be well started when he returns in July, 1968, from his year at Harvard where he will launch a professorship in Canadian studies. With working drawings on schedule, it is hoped to break ground on the St. George-Harbord-Huron-Sussex site this fall. Principal architects are Mathers & Haldenby, Toronto, who were responsible for the National Library at Ottawa. Design consultants are Warner, Burns, Toan & Lunde, New York. This firm designed the libraries at Cornell and Brown, which a U of T committee ranked above all others after a continent-wide study in the United States. Construction will take about three and a half years.





A powerhouse for the mind

UNIVERSITIES throughout Ontario will benefit both directly and indirectly from the $42 million Humanities and Social Sciences Research Library on the St. George Campus. Under the first heading are 600 study places, including closed carrels and related services, on which professors and graduate students from other institutions will have first call.

The indirect benefits are no less significant. "Our research library is an indispensable element in honouring the commitment to meet Ontario's need for more university teachers," President Claude Bissell has pointed out. This year, full-time enrolment in the Graduate School approached 4,000, far ahead of forecast.

(A full description of the new library was given in the May *Varsity News*. Copies may be obtained at no cost by writing Department of Information, Simcoe Hall, University of Toronto.)

Another example of U of T co-operation is ONULP – the Ontario New Universities Library Project.

(*Continued on page 126*)

Squeezed between the irresistible and the immovable, this thin Blue line keeps its cool

PACAF IS WHERE the democratic upsurge of professors demanding the space and facilities to match their ever-increasing responsibilities in teaching and research — not next month, next year, but now! — meets the construction schedule of a rapidly expanding University.

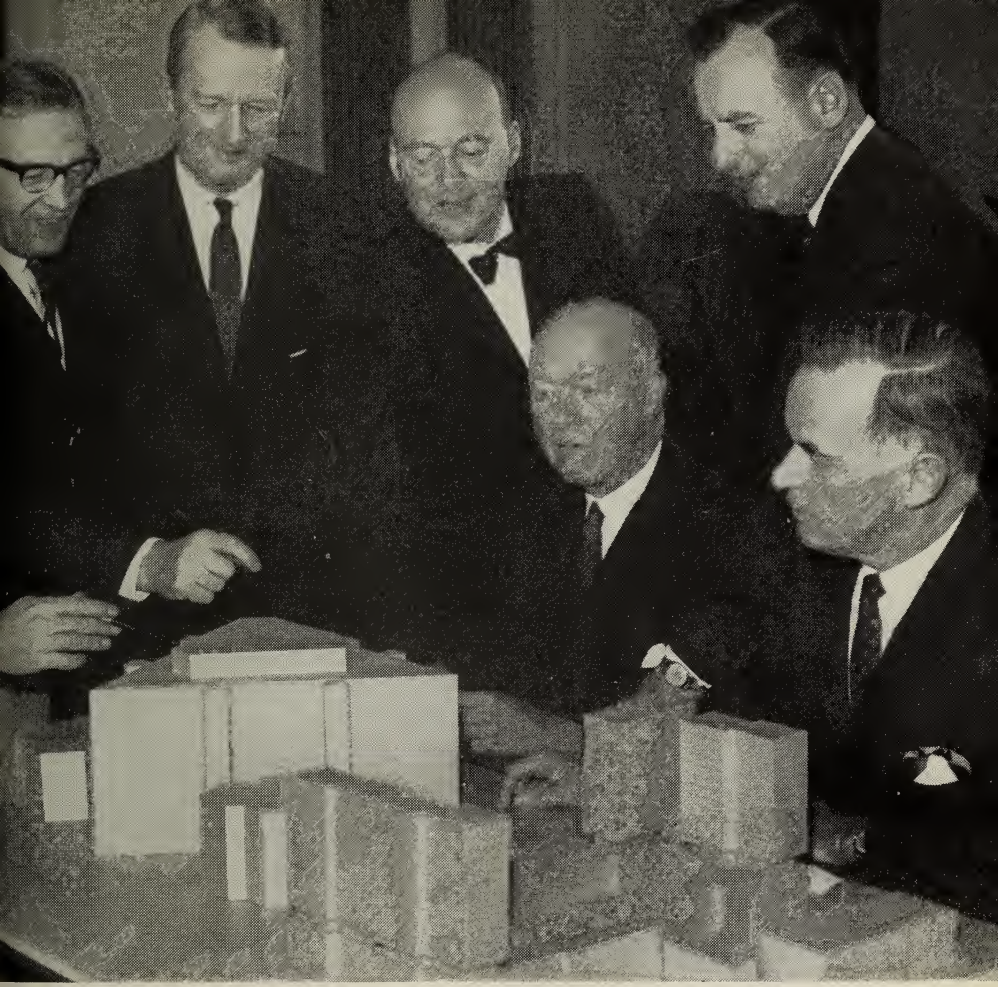
The new or renovated building the department is scheduled to occupy is not — for good and sufficient reasons — ready. The wreckers or renovators are about to peel the shingles off the roof of the one it's in. Such a problem which, even in a non-academic community is something like a bomb with a short fuse, goes to PACAF — President's Advisory Committee on Accommodation and Facilities. And PACAF, which plotted the original schedule, amends it with wisdom, tact and dispatch. The game this team plays has been compared with checkers, chess, and musical chairs. They know about dominoes, too — that an expedient solution to one problem may knock over a dozen other carefully made plans.

The accompanying photograph was taken to celebrate PACAF's 300th meeting a few weeks ago. Seated at the right is the chairman, John H. Sword, Vice-Provost. Adept at reconciling the irreconcilable, he is also chairman of the Central Budget Committee. On July 1, when Dr. Claude Bissell begins his year at Harvard, Mr. Sword becomes Acting President of the University.

Beside Mr. Sword is Dr. R. R. McLaughlin, chairman of the University's Planning Committee and, across the table, F. J. Hastie, director of Physical Plant.

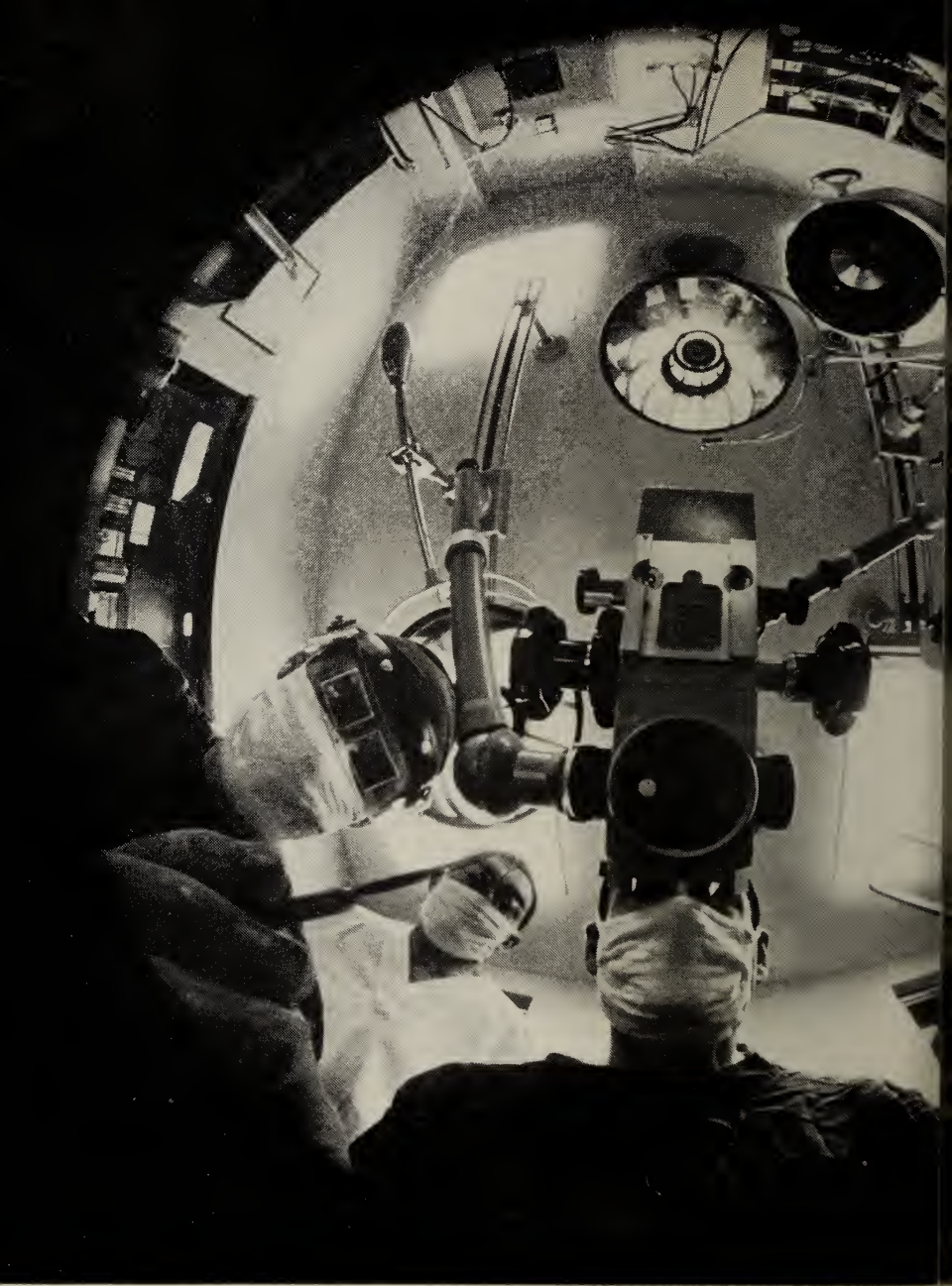
At the top of the photograph, from the left, are Professor Donald F. Forster, who becomes Vice-Provost July 1 while retaining his present duties as Executive Assistant to the President; Frank R. Stone, Vice-President (Administration); Dr. Moffatt Woodside, Vice-President and Provost; Dr. John Hamilton, Vice-President, Health Sciences; and D. S. Claringbold, Secretary of the Board of Governors and Director of Administrative Services.

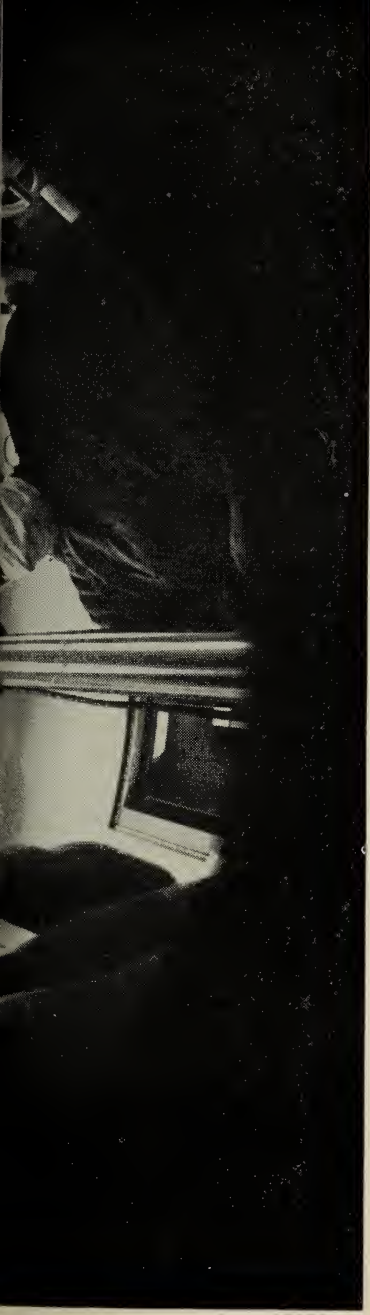




At PACAF's 300th meeting, the "junior" members presented citations to the four remaining founding fathers, Mr. Stone, Dr. McLaughlin, Mr. Hastie — and Dr. Woodside who invented the committee and gave it its name — "the name is long, meaningless and little used, but its initials are unambiguous and symbolic. When uttered, they have a pneumatic sound that might suggest a cushion enduring punishment or an over-inflated balloon reacting to needling".

This was Frank Hastie's citation: ". . . in recognition of his patient, courageous, disinterested devotion to the duties of PACAF since its establishment in March, 1958; his survival as one of the four remaining charter members; and his record as an absentee at less than one-tenth of three hundred meetings . . . and to emphasize that this achievement renders him, to a greater degree than any of his juniors on this élite body, responsible for the delays, frustrations, irritations, outrages, oppressions, claustrophobias and apoplexies suffered by the academic staff and other members of the University these many years. . . ."





Eye research at the University and in the teaching hospitals is stimulated as U of T labs get five times former space

The Eyes Have It!

Ronald Kenyon

Psychologists say that about 80 per cent of our useful sensory input passes through the eye. While we may not match the distance vision of the eagle, or night eyesight of the cat, we excel in the Jack-of-all-trades category. We have colour vision, binocular vision, night vision and a good field of view; most animals and insects lack this complete complement. Relationship between eye and brain is a study of its own. We do not perceive (a brain function) all that we see (an eye function), nor even perceive exactly what we see.

What is given may be taken away. Canadians are still going blind and developing serious vision defects, ranging all the way from short or long-sightedness to glaucoma,

Left: Bob Lansdale put his camera on an operating table to record the equipment and meticulous preparation involved in modern eye surgery. The photograph was taken in the Toronto General Hospital. At the overhead microscope is Dr. Clement McCulloch, head of ophthalmology at University of Toronto and the hospital's ophthalmologist-in-chief.



diabetic blindness, retinal detachments and cataracts.

For a good many years, the Eye Department of the University, despite the relative importance of its specialty, has been virtually a Cinderella service, spread about in various offices and laboratories of the Banting and Best Institutes, carrying out excellent work difficult for the outsider to appreciate because he could not see it all at once.

In April came a great change for the better. The Department laboratories moved into the former Connaught Laboratories building at One Spadina Crescent. With five times their former space, the labs are now in a centre specially planned for cohesive work and administration.

The occasion was celebrated by a two-day symposium for doctors only. The 25 scientific papers covered such subjects as "Cicatricial ectropia in ichthyosis congenita" and "Metabolism of Phosphoinositides in the Normal and Degenerating Optic Nerve of a Cat". The day was saved for the layman by special exhibits. It required about three hours to view these properly and they were open to the general public. Several hundred school children were among the visitors.

The development of the Eye department is made possible under a total plan by which the Government of Ontario is lending increasing support to health services. More dramatic results of the policy are the acquisi-

Facing page: At the opening of the Eye Department's new laboratories, Dr. John Hamilton, Vice-President for the Health Sciences, is seen at one newel post and Dr. Clement McCulloch at the other. The Deputy Minister of Health, Dr. K. C. Charron, who officially cut the tape, stands beside Dr. McCulloch.

Right: Medicine's Dean A. L. Chute and Dr. F. G. Kergin.



tion of Sunnybrook Hospital and the magnificent medical sciences complex now rising on the St. George Campus.

The Department itself, under the direction of Dr. Clement McCulloch, consists of services extending through six of the University's 10 teaching hospitals (the other four have no eye departments) as well as the laboratories. It includes services to eye patients, teaching of graduates and undergraduates and research. Clinical research is carried on largely in the hospitals, while the laboratories on Spadina Crescent provide special facilities for the use of clinicians.

The Eye Bank, to supply human corneas for corneal transplantation, under the direction of Dr. P. K. Basu, is also in the laboratories. The cornea of the eye, which is the thin membrane that covers the outer surface, can become damaged so that light will not pass properly to the lens and thence to the retina at the back of the eye. Corneas, often willed to the Eye Bank, are obtained shortly after death for use in replacing the damaged corneas of living people. Unfortunately, there are not nearly enough natural corneas available, so one important piece of research now in progress is to develop an artificial plastic cornea.

An artificial cornea developed elsewhere has been placed in a human patient in Toronto, but the Toronto team consisting of Dr. Bernard Zucker, Dr. Basu and Fred Sanger are developing their own artificial cornea, so far tried only in animals.

A great deal of work is being done in fundamental studies. One of these relates to the cornea and is being carried out under the direction of Dr. Y. Matuk and Mrs. E. Marai. It has been shown in Toronto that the cornea synthesizes protein, especially in a subcellular fraction. This could have an important meaning, since transplanted corneas often "cloud over" and fail to take. The failure of these transplants could be due to an immune reaction triggered by the presence of foreign protein in the cornea.

Glaucoma, which has been getting increasing attention in recent years,



Left: Dr. David Smith, who is a member of Dr. Michael Shea's low temperature (cryogenic) research team, shows his wife and daughter how device works.

occurs most often in people over the age of 40. It is caused by an excess of fluid pressure inside the eyeball (which is kept inflated by fluid, much as a car tire is inflated by air). The ducts which normally drain off excess fluid, maintaining the proper pressure, close off and the pressure builds up. This damages the retina at the back of the eye (the retina roughly corresponds to the film in a camera) and causes blindness.

Dr. R. Keith MacDonald of the Eye Department and H. F. Pierce, of Lennoxville, Quebec, have developed a seton, a tiny tube of silicone, which can be set into the eye to replace the damaged duct, thereby enabling the pressure to be relieved. These setons are smaller in diameter than a human hair.

Another member of the Eye Department, Dr. J. S. Speakman, is trying to find why the drainage passages close, which is still unclear.

Glaucoma can be treated either surgically or medically or both, according to the case (Dr. MacDonald's setons represent one kind of treatment). In testing patients for glaucoma, an instrument called a tonometer is used to measure the pressure in the eyeball. The Eye Department provides a checking and calibrating service on tonometers for doctors anywhere in the country.

Cataract is a condition which affects the lens of the eye (corresponding to the lens in a camera). The damaged lens can be removed surgically and special glasses fitted to focus the image on the retina without the lens of the eye. Dr. J. R. Miller is studying pressures inside the eye after cataract extraction and Dr. W. D. Samis is investigating the use of intravenous analgesics (pain-killing drugs) for use during surgery.

Going back further in the eye, one reaches the retina, a thin membrane, like the film in a camera, attached to the rear part of the inside of the eye. The retina holds the rods and cones which respond to light. The resulting impulses are passed to the brain by means of the optic nerve which connects with the retina.

A fairly common eye affliction is detached retina. The retina "comes

unstuck" from the wall of the eye. Put technically, fluid accumulates in the space between the retinal pigment epithelium and the neurosensory layer of the retina. The part of the retina that has come away is separated from its main source of nourishment and is soon damaged.

Dr. Lionel Chisholm, of Toronto Western Hospital, is studying detached retina. Some patients have repeated pin-hole breaks which, untreated, may cause widespread tearing. Often the problem seems to be hereditary. Detachment is brought on in more than ten per cent of cases by an injury.

There have been many methods of treatment. One of the newer ones is the "welding" of the retina back into place by an extremely hot, highly focused light source. Dr. C. B. Mortimer has been studying the relative advantages of using a laser or a photocoagulator for this purpose. So far, the photocoagulator seems to produce good effects with less damage than the laser.

At the opposite end of the temperature scale, eye surgeons are now using probes with tips that can be reduced to extremely low temperatures. These are called cryogenic probes. Such a probe has been developed in the Eye Department by Dr. Michael Shea of St. Michael's Hospital. It can be used to destroy unwanted tissue (the temperatures at the tip of the probe can be made so cold that they are deadly to living cells) or to cause tissue to adhere to instruments. This latter is useful in cataract surgery where the tiny lens of the eye is to be removed. The principle is simple. If you have ever had your hand stick to metal on a very cold day, you can readily understand how the lens fastens itself to the sub-zero tip of the probe.

One of the most worrisome causes of blindness is diabetes. This type is actually increasing in Canada. A study has been under way for some five years and is a collaboration among the departments of medicine, endocrinology, neurosurgery, otorhinolaryngology and ophthalmology. A current project is the investigation of the results of removal of the pituitary gland as an attempt to arrest the repeated hemorrhages into the eye, one cause of blindness.

Although in most cases the clinicians in the teaching hospitals use the Spadina Crescent laboratories for their lab research, there are a few instances in which hospitals have laboratories. In the Hospital for Sick Children laboratory, clinical material directly related to patients is studied. An investigation of infectious diseases of the eye is one of their projects.

At the Hospital for Sick Children, too, a study of amblyopia (lazy eye) has been going on. Sometimes, one of a child's eyes becomes so "dominant" over the other that the weaker eye is scarcely used at all. You'd think this would save and protect the weaker eye, but it doesn't. The brain becomes so accustomed to accepting all its messages from the dominant eye that it ignores the weaker eye. After a certain age, believed to be about six,



Left: Dr. A. J. Elliot, former head of U of T Eye Department and now in the same post at UBC, joins Dr. McCulloch at one of the exhibits. Dr. J. A. Orpin tells them how he is using the equipment in his area of vision research.

Facing page: With Dr. P. K. Basu are Mr. and Mrs. Bredin Stapells, members of a family that has given generously to the support of the department.

it may become impossible to correct the condition completely.

A common approach to treatment is to put a patch over the dominant eye, so that the child is forced to use the weaker one. But sometimes this does not work. The child may be unable to see properly in school. There are times when the brain actually appears to reject the messages of the weaker eye, and will not respond.

Under Dr. W. P. Callaghan, studies are being made of a system whereby, in certain cases, the weaker eye is patched. This enables the negative responses from the brain, which reject the weaker eye, to become relaxed. After a period of time, the patch is moved to the good eye. The brain then accepts the weaker eye, it is gradually strengthened and the situation is saved.

To get over the school problem, patches are sometimes applied only at home, though this considerably slows up the process of getting the lazy eye to work.

There is another fascinating study in progress at the Hospital for Sick Children which gives even deeper insight into the complex relationship between the eye and the brain. Under the direction of Dr. H. P. Brent, this is a detailed investigation of the causes of learning disability among schoolchildren. It is being carried on in cooperation with departments of pediatrics, psychiatry, psychology, neurology, speech therapy, physical and occupational therapy and otolaryngology — and with educationalists.

One child has been found who does "mirror writing." He writes backwards. He somehow perceives backwards. If you hold his printing up to a mirror it is easily read and the letters are well formed. One of the curious things about this child is that if he is told to copy something, he will copy the letters correctly, but asked after an interval to write the same word, he will write for a mirror.

His case is clear proof that the brain and the eye can play strange tricks on each other.



In their new quarters, the Eye Department's laboratories will not only be in a position to carry out better research of their own but will also strengthen the research programs of teaching hospitals.

This, in its turn, means that there will be better facilities for teaching of graduates and undergraduates. And, further, with advantages that pyramid, this largest Eye Department in Canada will influence the specialty of Ophthalmology throughout the country. The biggest burden of the teaching program is already in the graduate field, with residents taking three-year courses leading to fellowships.

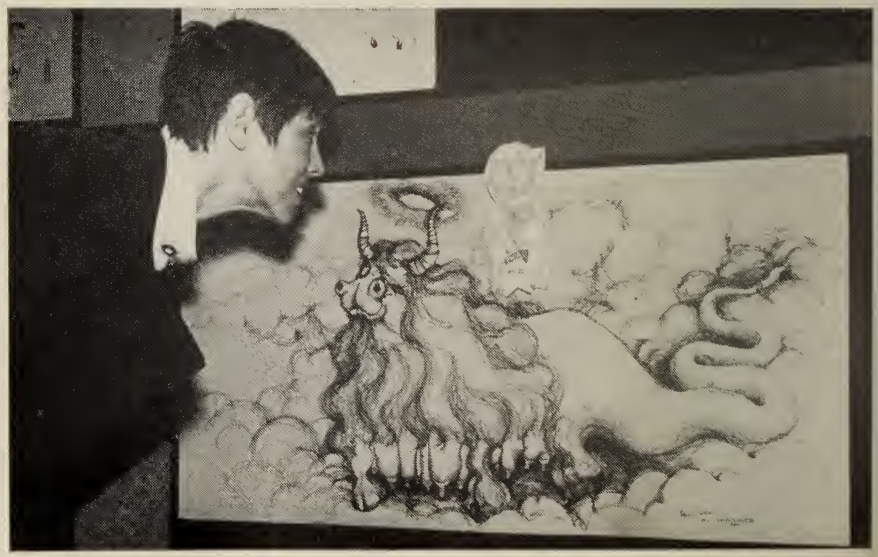
Among the residents the most important objective — aside from obtaining a fellowship — is to win the Alumni prize for the best paper offered by a senior resident. This year the prize winner was Dr. J. K. Warnica for a paper on "Blow-out and Rim-way Fractures of the Orbit". Sounds complicated? Not really, for the orbit is the socket of the eye — the bony area that holds it in place. A rim-wall fracture is pretty much what it sounds like, a fracture of the wall of the orbit, usually caused by a very heavy direct blow, such as in a car crash.

A blow-out fracture is a bit different. It is the type that can be caused by much less force, such as a punch in the eye. The impact on the eye itself causes transmitted pressure to the orbit and may fracture it.

A black eye is not always something to joke about.



Above: to demonstrate "conservation of angular momentum", Engineers put their victim in a chair balanced on a pivot set in roller bearings, place a lead ball in each of his hands, and spin the chair. He soon learns that he can control his speed by moving the weights closer to or farther from the centre of rotation.



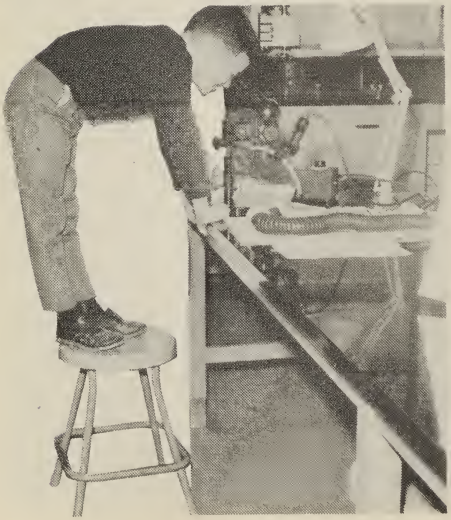
Engineers prove an old law
an Architect designs a cow
Zoologists make a new fish



Above: on display at the Biology Club's Zoology Conversat were these splake hybrid trout, the result of mating a female lake trout with a speckled male.

Left: "Design a new animal and an environment for it" was a one-day problem in the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture — which ceased to be the School of Architecture on March 9. At the Open House, Miss Barbara Moon studies one of the solutions, Boris Cujat's "Holy Cow".





Above: a monitor lizard, reasonably friendly to begin with, is agreeable to having his chin scratched at the Biology Club party. The young lady carrying him around is Linda, whose father, Dr. Gordon Edmund, is curator of vertebrate palaeontology at the Royal Ontario Museum.

Left: a fellow really hasn't lived until he has studied an earthworm through a dissection microscope. The young man learning about the joy of discovery at the Zoology Conversat is Jay Boucher.

A chat about Expo with Erindale's Principal becomes a mind-stretching excursion involving a South Pole that changes to a North Pole, continents that weld together and then rip apart, and "tree-rings" striping the ocean floor

The world we think we know is but the froth on the soup of a living, restless Earth

J. Tuzo Wilson *interviewed by Allan Anderson*

"The first I heard of Expo," said Dr. J. Tuzo Wilson, Professor of Geophysics and newly-appointed Principal of Erindale College, U of T, "was when I was invited to what was called the Montebello Conference in May, 1963."

That was the beginning of an association with Expo that involved other faculty members of the University of Toronto, eventually a Chinese junk and a theory about a mobile earth.

A "varied group of people" met at Montebello for exploratory conversations. The group included architects, scientists; Wilder Penfield, the brain surgeon; lawyer and poet Frank Scott; writer Gabrielle Roy; university presidents Davidson Dunton and Norman MacKenzie, and various others.

They were told that the theme of Expo was Man and His World. "I have a great respect for the organizers of Expo," Dr. Wilson went on, "Mayor Drapeau did a first-class job. They really wanted to do a lot of thinking about Expo. The net result was that we came up with Man the Creator, Man the Producer and Man the Explorer. We broke the theme, Man and His World, down into a series of groups which dealt essentially with the arts, with science, with the polar regions and space, with industry, with agriculture, with various aspects of Man and His World. They set up advisory committees, groups of people in every one of these fields.

"After a few preliminary changes, Arthur Porter of this University (head of the Department of Industrial Engineering) became chairman of the advisory committee on science and medicine, and Helen Hogg (professor of astronomy), also of this University,

and myself were other members. Dr. Omond Solandt, the Chancellor, was a member of the Expo corporation — it's a crown corporation that is running the fair. Many others from the University have had a hand in Expo".

Tuzo Wilson is a man who surfaces readily with ideas and responses. How did he react to the Expo challenge?

"Well, I was very excited at the idea, because it has always seemed to me that the great lack in science in our time is the inability to communicate sufficiently fully the ideas of science to the general public and even to communicate with other scientists. This lack of communication is a serious aspect, and science is so important in the modern world that it's vital for people to know about it. Clearly, the World's Fair was an opportunity to tell them about it. I've always been interested in methods of communication."

The role of the advisory committees was to come up with suggestions. The ideas they produced resulted in the theme pavilions at Expo.

"What the committees did was pinpoint what was modern in science (and other fields) that could be shown, and only a very small fraction of that was shown at Expo. But that was to be expected. Furthermore, the advisory committees didn't design the sets, we didn't design the displays. We put forward ideas.

"For instance, we suggested they could have a tunnel which people could walk through and see the inside of the earth, see what it looked like. We suggested they could have certain exhibits that dealt with the origin of a volcano, with the origin of earthquakes. We suggested they show certain things about mining and that some things would be more interesting than others. We thought they should consider space and the surface of the moon — visitors could walk over a mock-up of the surface of the moon. It turned out that space was not used extensively in this exhibit because it was dealt with so fully by the Americans and the Russians. They left out a lot of things."

Dr. Wilson is a brilliant theoretician, but he has never been willing to leave it at that. Get up and get out and see for yourself has been his approach. So off he went, seeking out museums and fairs across the world, to let Expo benefit from the best that had preceded it.

"I went to museums and exhibitions all the way from Moscow to Munich, to London, to Paris, to Lausanne and the Swiss Fair, to New York, Seattle, Chicago, and of course to Ottawa and back to Toronto to get ideas as to what might be shown."

From this quest, Dr. Wilson came to certain conclusions: "Black and white pictures with lots of text, with no motion, are the dullest way of putting things across. The introduction of colour helps; movement helps even more, and lights. Then if you can have push-buttons, so much the better — so that things work when you press a button. This is exciting, provided you get the buttons high enough so that six-year-olds don't press them all the time. The best way of all is to

The accompanying article is a salute to Erindale, the newest of the University's Colleges — and its Principal who takes to his post enormous personal drive and an enthusiastic approach to the new thinking about this dynamic planet. Born in Ottawa in 1908, Dr. John Tuzo Wilson has degrees from Toronto, Cambridge and Princeton. He has been around the world five times, has visited more than a hundred countries from the North Pole to Antarctica, has lectured at more than a hundred universities on six continents.

At *right*, Dr. Wilson makes a point with Professor Gordon West, a colleague in Geophysics. This stance, this expression are among the new experiences awaiting Erindale's first freshman class in September.



have people actually turning a crank or lifting a weight, or doing something themselves. You want movement, colour, action, and people really involved, not just watching."

After all this concentration of effort on the part of many people, has Expo achieved what it set out to do?

"I think that Expo took a lesson from the New York World's Fair which was a deliberate attempt by large American industrial corporations to sell their products. Well, this is quite legitimate. But it turned out that the American public wasn't terribly interested and the world even less so. The world didn't want to come and see a big exhibit of a big automobile company. The Americans can see all this in their home towns. What does excite them is the opportunity to see things they can't see at home, and to see things that are new and fascinating and from different parts of the world. So the idea of having 60 or 70 nations participating, each showing its best, and the idea that there's a theme, that people have thought what man is doing, what man's place is in the world, this intrigues them. Those who put it together have tried to make it humorous, tried to make it thoughtful, and this is what appeals. Expo is clearly an enormous success. I'm thrilled by the result, I think the whole thing is really excellent. It's a great triumph for Canada."

Tuzo Wilson is a tall, cheerful, crisp man whose ideas tumble out so ex-

plosively that even a rapid-fire delivery can hardly keep up with them. He has an erect, military bearing, and a most unmilitary twinkle in his eyes. He is a practical man, but his practicality is sometimes a little out-of-the-ordinary. He is delighted by Expo and has spent and will spend some time looking it over. But he did not fly to Montreal nor did he take the Rapido.

Dr. Wilson and his family arrived in Montreal aboard a Chinese junk.

The story of Dr. Wilson and his junk goes back about three years.

"Many years ago, I joined the University of Toronto community on Georgian Bay, on Go Home Bay. There are about 80 cottages. We had one there, but I never had a boat larger than a little runabout. I wanted something better, so I could cruise Georgian Bay. A former student of mine was in Hong Kong and told me about pleasure junks, what great craft they are. They're a standard conversion of the 2000-year-old junk used as a pleasure boat around the islands of Hong Kong. There are many islands there. The coast is not unlike Georgian Bay, a bit more rugged. The junks are built for the ocean. They're very seaworthy.

"This friend of mine in Hong Kong agreed to supervise the building of a junk for me, which was then shipped to Toronto Harbour on a freighter. It was shipped in one piece. It's thirty feet long and eight-and-a-half feet wide. It has two masts and two sails, a diesel engine, and it sleeps four, or, as my wife puts it, 'two adults, a child, and a dwarf'. It was shipped by Japanese freighter — there's a Japanese freighter every couple of weeks all summer from Hong Kong through the Panama Canal and up the Seaway to Toronto.

"It was tied down on the aft deck. It weighs five-and-a-half tons. They just hoisted it up, put it on the deck, tied it down, and when they got into Toronto Harbour, they put it in the water.

"I took it up the Trent Canal to Georgian Bay. It takes five or six days up the Trent from Toronto. It depends on the traffic. You go through 44 locks. It's very pleasant through the Kawartha Lakes, past Peterborough and into Lake Simcoe.

"That was three years ago and I had it in Georgian Bay until last fall, when it occurred to me it would be a good idea to take it to Expo. It runs very economically — 12 miles to the gallon on diesel fuel. You sleep on it, you cook on it, you live on it, and at Expo you can put it up for $5 a night. And so my wife and I, and possibly a daughter, can sleep on it for $5 a night, right in the grounds of Expo and you have your own accommodation — nobody else does — right at the marina. No, I don't have to worry about Logexpo!"

Nevertheless, Dr. Wilson had to pay a certain price for taking his junk to Expo. Because he knew the Trent canal system would not be open in mid-spring, he left the junk at Belleville last fall. In April, he and two others sailed the junk to Montreal. Only by a considerable stretch of the

imagination could one have called it "spring". Dr. Wilson modestly states the case:

"The weather was fine and sunny. In April, the water is cold and hence the air over it is cold — it's a chilly time of year and one is better off to wait until July or August to go out on a small boat. But we had no difficulty at all — it was just chilly weather for being out on a junk, so early in the season. In fact, we were the first small boat down the Seaway this year. The lockmasters told us so."

At night, the party crawled into sleeping bags, and managed to be reasonably comfortable.

Dr. Wilson had a rendezvous in Montreal. He was scheduled to deliver one of the Noranda lectures at Expo, a series of distinguished lectures sponsored by Noranda Mines Ltd. and given in the auditorium built by Dupont of Canada Ltd. Dr. Wilson, in the glare of lights for TV cameras, talked about "Terre des Hommes" — a lucid exposition of revolutionary ideas that have galvanized scientific thinking about the earth sciences during the last three years.

"The discoveries made by new methods have been unexpected, they are still not widely known or appreciated," Dr. Wilson told his audience.

"Today, the greatest efforts and expenditure in research are being devoted to sending men to the moon. Naturally, geologists and geophysicists were asked to predict what its surface would be like for landings. Unfortunately, planetary science was too undeveloped to be a good guide and until the first satellites landed, no one knew whether the moon was thick with dust or not.

"Beyond the moon lies Mars, but again planetary science could not forecast the nature of its surface. Until photographed from the Mariner satellite, Mars was believed to be covered with canals, but these were an optical illusion and the surface is cratered like the moon.

"On earth, a discovery only 10 years old is even more astonishing. At that time, Heezen and Ewing suggested and subsequently proved that the seismically active, submarine mountains known to lie through the Atlantic, Indian and Pacific Oceans might be connected through the Southern Ocean south of Africa and Australia. The continuity of the mid-ocean ridges which they established thus makes them the greatest mountain system on earth. That such a momentous discovery could be made so recently is astonishing. It shows how little we know about the earth and how feeble were our methods for investigating it.

"These advances have been but the first of many. A flood of new methods and new ideas generated by them has burst upon an old and staid branch of science.

"This winter, meetings of geologists and geophysicists have been dominated by accounts of spectacular new observations about ocean floors, about magnetic imprinting of rocks by reversals in the earth's field, about anomalous directions of motion along great submarine faults and about correlation of seismological and geo-

chemical ideas concerning the mantle of the earth.

"Most of these discoveries concern the hitherto unknown ocean basins and the earth's interior and these advances may be likened to a great wave of discovery and revolutionary ideas which is sweeping away old concepts of the earth and replacing them by a sea of fresh ideas upon which to venture and explore. Its coming has not been unexpected for it was heralded by a ground swell of unease and self-criticism among geologists. It is the nature of the changes involved that seems surprising, for out of them a different theory of the earth is emerging, not entirely new, but not accepted heretofore. Some of our most basic views about the earth seem to be in error.

"From the beginning, we have thought of the earth as a static and rigid body, occasionally subject to slight disturbances. Lip service has been paid to the possibility of convection in the mantle and to continental drift, but these ideas were not widely accepted and even their originators did not pursue the consequences of mobility to logical and necessary conclusions. . . .

"A tremendous swing is now underway towards conceiving of the earth, in its own slow way, as a dynamic and mobile body, continuously stirred by vast motions, which transport and mix its upper layers. . . .

"The consequences of this change in basic thinking are very far-reaching. For the first time, it is coming to be recognized that the geology of the continents may not be a reliable guide to the nature of the rest of the earth. . . . The old concept of a static earth permitted all parts and aspects of the earth to be isolated for separate study, so that it was sensible to study geochemistry without considering seismology, palaeontology without a knowledge of geomagnetism, and to isolate small regions for intensive geological work.

"Under the concept of a dynamic earth, all this has been changed, all the properties of the earth now seem to be interwoven and must be studied together, all parts of the earth react on one another and the history of no continent can be understood except in relation to the behaviour of the earth as a whole."

In an interview some time after his Noranda address, Dr. Wilson linked up for me some of the new earth concepts that so excite the earth scientists (and which he has had a hand in formulating).

"Men, inevitably from the beginning," he said, "thought of the earth as terra firma, as something very firm and rigid and solid. It seemed inconceivable that it could be moving about very much. At the same time, as long as 300 years ago, people began to notice, when the Atlantic was mapped, that the two sides matched each other very well, and so did the two sides of the Red Sea. And this idea was put forward in vague terms very long ago, and increasingly more definitely, until 50 years ago Alfred Wegener, an Austrian, put it forward in very definite form, put forward the idea that

the Atlantic had opened. This caused a great controversy. Some people have ever since then believed he was right . . . the public rather more than the experts. The public didn't see the difficulties. The problem for the experts was the difficulty of moving continents about through the solid rock of the ocean floors. The geologists and geophysicists of the mining and oil industries didn't like the idea, they didn't incorporate it in their thinking about prospecting. The converts of ten years ago were regarded as definitely rather queer.

"I joined the bandwagon myself about seven years ago, and I've been very keen about it ever since. But what really made the change was the money spent for defence purposes, and this has been an incidental product of that spending. The people interested in defence and space spent money on examining other planets, the moon and Mars, and this made them think again about how the earth was behaving. They were concerned about the search for nuclear submarines and how to navigate their own nuclear submarines, so vast sums of money were spent in exploring the oceans, hundreds of millions of dollars, far more than had ever been spent before.

"Their scientists found the greatest mountain system on earth, eleven years ago . . . 40,000 miles long, rarely less than 10,000 feet high, hundreds of miles wide, and very little of it visible on the surface except for a few peaks like Easter Island, Iceland and the Azores. . . . There were many differences between mountains on the continents and the one on the sea floor: the mid-Atlantic mountains were made of different rocks. They seemed to be of different ages, had different habits, different kinds of earthquakes. In every respect, they seemed to be totally different."

The discovery of this great mountain ridge, an intensified study of earthquakes, and of the sea floor, brought out some startling facts.

"The surface of the earth resembles not so much a stone as it does the surface of a pot of boiling soup," Dr. Wilson claims. "If you think of yourself in a kitchen watching a pot on the stove, you know that the red tomato soup, or whatever, is forever boiling up freshly, and there is likely to be a certain amount of froth collecting on the surface. And the froth does not behave the same way as the soup. The froth stays on the surface, it doesn't get carried down, whereas the soup is forever turning over, the soup surface is forever being renewed.

"Well, it turns out, in the present view, that the continents represent the equivalent of the froth, and they have been on the surface for a long time and are relatively static. The pattern they show is a pattern of accumulation, because more froth is being added from time to time.

"On the other hand, the floors of the oceans — the water is just incidental — the floors are being renewed. They're coming up in this mid-Atlantic ridge that lies through Iceland and the Azores. There are earthquakes there where the surface is cracked, and the white-hot interior is turning

over and pulling the ocean floors apart, and dragging the continents along with it. And since the earth is not getting any bigger, this surface has to go down somewhere, and where it goes down and overlaps you get a deep ocean trench. Such trenches are found off the Aleutian Islands and off Japan and Chile. They are very deep trenches there, close to land. And these are places where the floor of the Pacific Ocean is going down underneath the continents.

"The Atlantic happens to be spreading and so are some of the other oceans. The Atlantic you can think of simply as pushing the continents — it's getting wider, pushing back North America farther west, pushing Eurasia farther east. These are pushed around towards the Pacific. So the Pacific is getting smaller. Japan and Canada, that is western British Columbia, are coming closer together."

The eddy of soup, the up-current in the Atlantic, coming up under the Azores and under Iceland and pushing the continents back, is moving at about the rate of an inch or a couple of inches a year.

What's the heat under the soup?

"The reason the plastic core of the earth gets hot," replied Dr. Wilson, "is because it has a certain amount of uranium and thorium in it and these generate heat. It has a certain amount of radioactivity."

Only in the last few years has there been dramatic proof of continental drift, of Europe and North America moving away from each other.

"What has made the story very exciting," explained Dr. Wilson, "why people have suddenly come to believe it, is largely due to a rather fascinating development of magnetic imprinting that has taken place recently. A Toronto man, Larry Morley, L. W. Morley, and his associate, André Larochelle in Ottawa, might have got credit for this discovery, but at the time it was considered so unfamiliar that they couldn't get it published. They were regarded as fanatics four years ago when they tried to get it published. About three-and-a-half years ago, the idea was published by two Englishmen, Vine and Matthews, so they get the credit.

"One has to visualize the earth's magnetic field as reversing. This is a very strange idea. But the North and South Poles, magnetic poles, change places from time to time. It doesn't mean that anything violent happens; the earth doesn't turn over or anything. It merely means that the earth's magnetic field, which is constantly changing a little, gradually dies away to nothing. The earth would cease to have a magnetic field, compasses wouldn't work, the aurora would disappear. But after a period of time, the field starts up again in the opposite direction, so that what had been the North Pole becomes the South Pole. This rather extraordinary reversal is known to take place in the sun every eleven years, and in many stars. The earth's magnetic field, on the other hand, reverses about twice every million years, once every half-million years.

"Now, if the ocean floor is spread-

ing an inch a year, it would spread about 10 miles in half-a-million years. That strip, let's say, would have normal magnetic polarity, normally magnetized, feebly magnetized. But in the previous half-million years, a strip on either side of this would have the reverse direction of magnetization. So the ocean floor would be striped, vertically from north to south, down parallel with the central ridge, with strips of lava that are alternately magnetized for the North Pole as we have it now, and then for the North Pole where the South Pole is at present.

"This pattern is an age pattern, and it resembles the growth rings on a tree stump. The ocean floors are all striped with a pattern of growth rings the same as a tree stump. If you take a magnetometer, fly it over the ocean, or take it in a ship, you can map these growth rings. And that's how it's possible to tell exactly how the continents move."

Two years ago, Dr. Wilson said, this idea was considered very odd, but in April he attended the annual meeting of the American Geophysical Union in Washington and he gave one of 71 papers on the subject!

For the mining industry, for the oil industry, there are very practical applications.

"For example," Dr. Wilson points out, "if you are looking for oil in the middle of a continent, it probably doesn't make much difference whether the continent is moving about or not. But if you are looking for oil in the Grand Banks off Newfoundland, it may make a great deal of difference whether that continent used to be against Europe and how fast it's been moving and how long it's been there. This is where it's going to make a difference. The off-shore oil is very important. It also changes our thinking about how some ores were deposited."

Tuzo Wilson not only affirms that North America and Europe were once one, but, also, that they came apart in a rather sticky manner. On April 18 of this year, *The New York Times* gave a detailed account of Dr. Wilson's theory, under the heading "Scientist Holds Most of New England Was Once Part of Europe".

Dr. Wilson explained it to me this way:

"Well, it's certainly true. I think I have found evidence (and I published this last summer) to the effect that the Atlantic Ocean was open 500 million years ago, which is not a vastly long time, geologically-speaking, and that it gradually closed. And it remained shut for some time and desert conditions prevailed. There was no ocean at all. There was just a great big continent that included much of North America and much of Eurasia and Africa and South America. And then about 120 million or 150 million years ago, the Atlantic re-opened. It didn't re-open in quite the same place. Pieces of the old continents got transferred to opposite coasts, so that there are bits of Europe around Boston and Nova Scotia, and little bits of North America in Scotland and Norway."

Dr. Wilson says that fossil and rock evidence confirm his theory.

All this brand-new ferment amongst

geologists and geophysicists and other earth scientists must affect university curriculums, Dr. Wilson points out.

"It's a switch in direction of thought such as took place in physics at the beginning of this century, when they changed from so-called classical physics to modern physics. And the curriculum in the universities was changed. They dropped a great many things like mechanics, acoustics and light. Not that they were wrong — they are still very useful. If you want to design a concert hall, you need to know acoustics. If you want to track a satellite, you need to know mechanics. But they no longer seem to be the most important methods of finding out about energy and matter, which is the subject of physics. Atomic theory took their place, and new ideas were introduced into the curriculum.

"The same thing is going to happen in earth science. These new ideas of a dynamic earth have got to be introduced into the curriculum and into our thinking. And this is the exciting thing. It's clear that there's going to be a rush of the leading universities and the leading research workers to develop these new ideas. They aren't all solved. It wasn't that the old work was wrong. We now see a more fruitful line to pursue, using the old and also introducing the new. We must change our thinking, we must change our courses, we must keep pace with modern developments in research."

A mobile, volatile, restless earth. Tuzo Wilson and his fellow-scientists seem to have proven that we do, indeed, live on a "go-go" planet!

Victoria's PETER BUITENHUIS reports in from California where he's teaching for a year

Berkeley

TO ANYONE coming from a northern climate, the most enduring impression of the Berkeley campus of the University of California is bound to be of its embracing, ubiquitous warmth. This is of course a determinant in its political climate too. It is absurd to imagine mass rallies of up to 8,000 students meeting two or three times a week behind the Provincial Parliament Buildings in Queen's Park from November through February. In such conditions of numbing cold, drifting snow and chilling winds, the hottest-headed radical would be reduced to the stiffest conservatism within a week. But in the large, open, pleasant area in front of the Sproul Hall steps in Berkeley, nothing is easier than to stand in the sun or under a mild, grey canopy of clouds listening to the splendid rhetoric of rebellion.

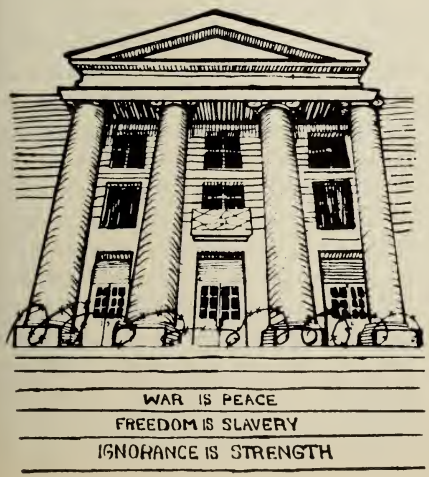
The Sproul plaza is situated geographically at the heart of the University and its surrounding area of restaurants, coffee-houses, bars, record and book stores, and lodging houses immediately to the west of it. Anyone going from any part of the campus to the area for lunch, or any other reason, at the noon hour is almost forced to

All sides are taking time out to cool out on a campus where the weatherman smiles benignly on rebellion and where even the relationship of the various buildings invites confrontation

the politics of Education

pass through the plaza. Within minutes, anyone can capture an audience of 500 there simply by booming a bit into a microphone. Symbolically, too, the situation of the Sproul plaza could hardly be more effectively organized in favour of dissent. Sproul Hall is the Administration Building, wherein the ranks of chancellors, vice-presidents, deans and their assistants go about their embattled duties. Immediately facing Sproul, across the length of the plaza, is the Student Union Building. The speakers stand on steps with their backs to Sproul to address the audience below. All they need to do to indicate the permanent opposition is to gesture at the building behind them, turn to shake a fist, demand an immediate answer from a denizen or whatever else seems appropriate. The Administration is well aware of its physical disadvantage. It has been announced that Sproul Hall will from next fall no longer be the Administrative centre of the University. But to the students a symbol, even the shell of one, is better than no symbol at all. When the Administration also announced that it would no longer allow the plaza to be used for meetings, but would shift their venue to the lower plaza behind the Student Union, the immediate reply from the students was a series of "Save Our Steps" rallies. The Administration quietly shelved the proposal.

Below: a cartoon from Berkeley's undergraduate newspaper



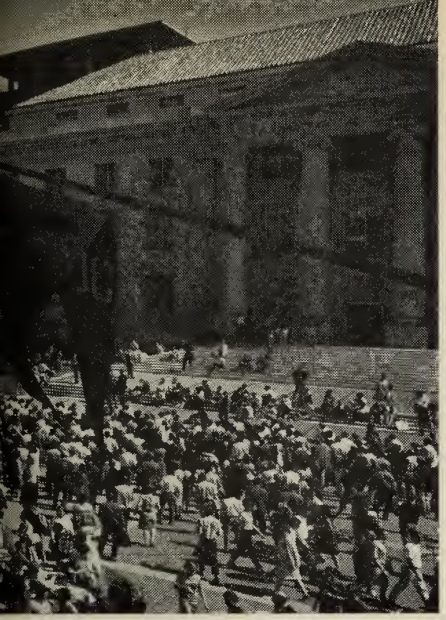
The symbolic situation of Sproul plaza has led to a permanent condition of what is known locally as "confrontation politics." On the one side are the students and the enduring core of radical non-students who live



around the campus, like Mario Savio and Jerry Rubin. On the other is the Administration, trying to uphold a kind of order and obedience to a set of rules that is itself under constant attack by the students. In the middle, a kind of third force, is the Faculty, a reluctant virgin always being wooed away from its study by both sides. Generally, the choice of the faculty on any particular issue is the deciding one.

It is easy to see how, under these conditions, that middle ground which is the foundation of working politics, is almost impossible to reach. Issues are exaggerated and dramatized. Heroic poses are struck, ringing denunciations made, sturdy defenses shouted. The rhetoric itself becomes both inflammatory and stereotyped: The FSM (Free Speech Movement), "Save Our Steps", "November 30" (the day of the sit-in on the issue of the Navy recruiting table). It is impossible to discuss slogans, or to compromise with them. They exist, the holy cows of rebellion, like Bastille Day in France.

This is not to say, of course, that the students have not had legitimate grievances. The situation of public institutions of higher education in North America is in itself ambiguous and fraught with difficulties. Over the years, particularly in universities that have grown large (Berkeley now has 27,500 students), faculties have allowed more and more of the duties and responsibilities of administration to slip out of their hands into those of a professional corps of administrative personnel, comparatively few of them scholars by training or inclination. One of the major tasks of the administrations of these universities has always



Left: this is Sproul Plaza with Sproul Hall on the right. The pennant of the Associated Students of the University of California hangs from Union Building from which the picture was taken

been the obtaining of money from a state governor and legislature more or less reluctant to give it. In order to do so effectively, they have to present to the state powers an image of the university as a place which not only produces the trained people essential to the prosperity and growth of the state (which even the dimmest legislator knows to be true), but also as a place in which there is an orderly group of faculty and students going about its legitimate business of disseminating and acquiring knowledge. To the legislative mind there seems to be something wasteful and unnecessary in political speeches, protests and demonstrations. Unfortunately for the legislators, however, in a democratic society, it is inevitable and essential that the university should be the centre for dissent from established modes of thought and set power structures. To attempt to suppress such dissent is to attempt to deny one of the most important functions of a university. Without this freedom, the university, let alone society, cannot long survive as a vital organism.

Berkeley has a long tradition of dissent, a fact intimately connected with its eminence as a University. In October, 1964, a smouldering situation burst into flames when an attempt was made by the Administration to restrict the freedom of political speech and activity on the fringe of Sproul plaza. After protests, mass sit-ins, arrests and the near-paralysis of University activity for many days, the Faculty voted in the Senate on December 8 in favour of an amnesty for those who had participated in the controversy, and for freedom from restriction of speech or advocacy for the students. The faculty also decided that, in order to prevent interference with the normal functions of the University, the "time, place and manner of conducting political activity shall be subject to reasonable regulation".

With a few notable exceptions, the adoption of the December 8 resolutions was regarded by the faculty and students alike as a good beginning of a new atmosphere of political freedom. Many students also believed further, however, that they and the faculty should be much better represented in determining how the rules,

particularly of "time, place and manner" should be interpreted. As months went by, the radical students began to feel that the Faculty was dragging its feet on the issue of representation and that the FSM was in fact losing ground, even though all student groups could use the Sproul steps without any fear of censorship. The question was precipitated by several incidents that moved towards a climax in the fall of 1966. As I have suggested, these incidents in themselves need not have led to a crisis. Confrontation politics in each case, however, led to an escalation of action and counter-action, so that by late November, in the midst of a campaign in which the Republican candidate for Governor was making an issue of "disorder" at Berkeley, the atmosphere had reached boiling point once again. Almost any incident would have precipitated a crisis; it happened to be the setting up of a table in the lower lobby of the Student Union by the U.S. Navy recruiting office. Without asking permission of the University, a pacifist group set up a rival table. That table and its attendants were promptly removed by the University police. Student pickets then moved in, and in no time the lobby was jammed. Eventually, the Administration called in the Berkeley police who arrested a number of strikers and then disbanded the sit-in. As a consequence, the students called a strike of classes. The teaching assistants on the whole and some of the faculty honoured the picket lines. Once again the faculty acted in Senate to break the crisis. In a series of resolutions, members voted overwhelmingly to urge the Chancellor not to proceed with disciplinary action against the students involved in the events of the previous week, declared that the strike should end immediately, charged its own policy committee to proceed with exploring new avenues for increasing student participation in the making and enforcing of campus rules, and called for the creation of a faculty-student commission to "consider new modes of self-governance and self-regulation appropriate to a modern American university community".

It is, of course, too soon to see whether this latest of faculty actions will have the desired effect, or whether the Faculty really wants to proceed to implement its proposals about "new modes of self-governance." If it does not, there is bound to be more trouble in the future. However, since peace had been quickly restored to the campus after the Faculty resolutions, no-one expected that one of Reagan's first acts on assuming the office of Governor would be to fire Clark Kerr, President of the nine campuses of the University of California and former Chancellor of Berkeley. In the light of Reagan's own campaign pledges and of his own highly conservative political ideas, it is impossible not to believe that the firing was a reprisal against Berkeley for its disorders, even though all but the extreme radicals agreed that Kerr himself had acted with great wisdom and restraint throughout the troubles. It is probable that the cuts that Reagan later insti-

tuted in the budget of the University, for all the talk of California's fiscal problems, were further reprisals against Berkeley. These two acts indicate that the University is facing a difficult period in the future.

It is quite clear, however, that Reagan is not going to have all his own way with the University in the future. The Faculty is already aroused. If further acts of the Governor can be construed as reprisals, there will be some serious consequences. The chief weapon that the Faculty has lies in the very nature of the academic market today. All the well-known professors and many of the lesser known ones on this distinguished Faculty could get appointments elsewhere rapidly. No state government, and particularly the government of a state as rich and progressive as California, can risk such a dismemberment of its university. At the moment, at least, there appears to be a truce as all sides, students, Faculty, Administration and government allow things to cool off.

There is certainly no simple lesson to be learned from all these events. The one positive value that has emerged is that the Berkeley Faculty can no longer afford to sit back and ignore the way in which the University is governed or how the students feel about the politics of the campus. The two issues are closely related. If the Faculty could become more a part of the Administration and vice versa, if the students could begin to feel that their activities were the concern not of Sproul Hall but of the people who taught them along with their administrative associates, the confrontation politics that has been the style of the last two years here would disappear. Only if the Faculty demand and receive a strong voice in the running of the University, all the way up to the Board of Regents, on which they are represented only by the President, can they in turn begin to feel that the University is being governed sympathetically. Many believe that the Board of Regents itself must be made a non-political body if it is to be not merely a conveyor of the desires of whoever happens to be in power in Sacramento. It has already been proposed that the Governor, Lieutenant-Governor and the three other governmental ex-officio members be removed from the Board.

In recent years, California has become the avant-garde in educational and political movements. Its atmosphere tends to make it the crucible for issues that are only coldly latent elsewhere. Certainly it would profit other institutions of higher learning in North America to ponder the implications of the events in Berkeley during the last two years. While confrontation politics may not be the mode anywhere else, the fuses of conflicts similar to those that have exploded here are present in most vital centres of learning. These conflicts may not lead to the disruption that they have caused in Berkeley. All the same, other universities would do well to consider, as the Faculty put it, "new modes of governance and self-regulation appropriate to a modern American university community".

The University's Benefactors (VII): Colonel McLaughlin's philanthropy is inherent. The impulse is spontaneous. Judgment tells him where and when to help. The quotation in the headline is not his — but it seems appropriate

"Riches are for spending . . . and spending for honour and good actions"

Crawford Grier

It was an exciting morning for the director of the Royal Ontario Museum. Several days earlier he had been talking to a stranger who said his name was English, that he was interested in certain aspects of planetariums and astronomical work, and that he came from Oshawa. He gave no hint of his real purpose — a fact-finding mission for a most important man. But now the man himself was on the long-distance telephone.

Colonel R. S. McLaughlin came straight to the point. "I have been thinking for some time about a planetarium," he said. "I would like to found one," (he did not say where) "but I understand there are some difficulties about obtaining the proper instruments."

Dr. Swinton reassured him: a building would take time and money, but the best Carl Zeiss projectors "could be bought today." There were some questions; the Colonel said he would call back; he did so half an hour later. This time he asked where a planetarium could be put, what sort it might be, and how it might compare in cost and apparatus with the one he was familiar with, the Charles Hayden Planetarium in New York. He got his answers and rang off again.

Within an hour he was back. "I have made up my mind," he said. "I am going to give you a million dollars for a planetarium. But this must be a good one: it has to be the best that you can build. I will send you a letter of intent today."

A million dollars? Costs have gone up; the million dollars has risen to more than two million. With characteristic generosity the Colonel has agreed to foot the bill; with him, as

with his father, the best is vastly more significant than the second best. The McLaughlin Planetarium, immediately south of the Museum, will be ready to launch its program of 32 shows weekly early in the coming year.

* * *

One hundred years ago this autumn the first McLaughlin vehicle, a cutter, was fashioned and completed. Robert McLaughlin, who built it, had little but his hands to work with; his workshop was a driving shed beside his farmhouse near the village of Tyrone ten miles from Bowmanville, Ontario.

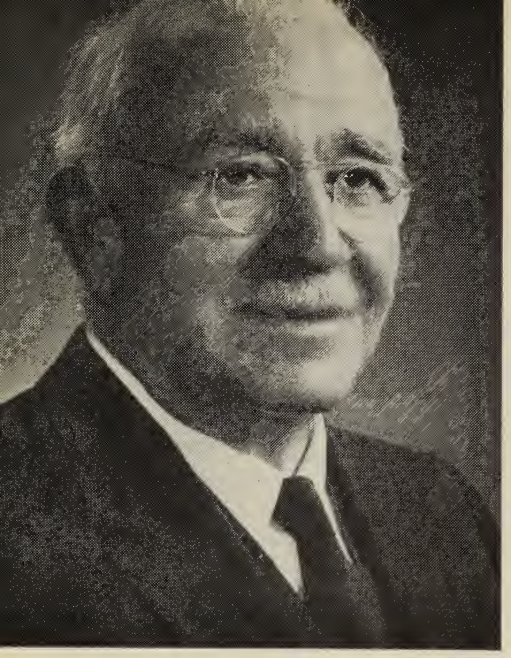
First a cutter, then a wagon, then more of both. In two years Robert had the makings of a business. He moved to the larger village of Enniskillen where in 1871 his third son, Robert Samuel, was born. Canada had fewer than a thousand miles of railway and scarcely two thousand white men west of Lake Superior. The second president of the University of Toronto was still in office. Streets were lit with gas — or not at all; there were no telephones, no typewriters, in use. No millionaires, no income tax.

In six years more the shop had outgrown Enniskillen. Robert moved again, this time to Oshawa where the railway was handy and banks were ready with a spot of working capital. There, with some elbow room, good workmanship, and nothing but the best materials, the business prospered. In June of 1887, the year in which the University Federation Act was passed by the Ontario Legislature, young Sam, not yet sixteen, joined the firm.

At first he was not sure he wanted to make carriages. Apprenticeship would be no rest cure; apart from chores at home it would mean working from dawn to after dusk, six days a week; two-fifty would be deducted from his $3 weekly wage for room and board. He had done well at high school and had graduated with distinction. Better, perhaps, to look about, try other things, before committing himself. "I thought that I might be a lawyer; I fancied that I looked like one," he says. But he was persuaded by his oldest brother Jack and, as an upholsterer apprentice, he found the passport to his world of people, industry, and service.

Some men have centred their whole lives on building up a fortune. Not Samuel McLaughlin. Riches have come to him like iron filings to a magnet, but he has had other things to think about. Material success is not the key to the legend to which he has perennially added, but rather the extraordinary universality of his interests and the duty which he seems to have laid upon himself from boyhood not only of doing but of being. He is the real Elizabethan type, with all the vigour, enterprise, and style of that historic age.

Going strong at nearly 96 (his birthday will be on September 8), Samuel McLaughlin has had the longest experience of any living person with all phases of the motor age. He is chairman of the board of General Motors of Canada, the giant industry he founded half a century ago and has led ever since. Until his April



Detail from a recent colour portrait of Colonel McLaughlin by Cavouk

resignation he had been a director of the U.S. General Motors Corporation (which he helped to found) for sixty years, and vice-president for fifty. He had foreseen the motor age emerging from the "horseless carriage" stage; forestalled its threat to Oshawa's prosperity by producing the first McLaughlin cars in 1907. He lives at Parkwood, a large and hospitable mansion in twelve acres of lovely gardens, wide green lawns, fine trees, a multitude of flowering shrubs, and Ontario's most beautiful chrysanthemums. He is a great traveller. He has a winter home in Bermuda, another hideout on Diamond Head at Honolulu. He is a Doctor of Laws of Queen's, Toronto, and York, and honorary colonel of the Ontario County Regiment, but he has been "Mr. Sam" to everyone in Oshawa longer than the oldest can remember.

When he is not wintering in Bermuda or Hawaii, or called away for some appointment, Mr. Sam is at his office every day. He's up early in the morning, does exercises before breakfast, and takes a brief rest after lunch before returning to the office. He is a shortish man, compactly built, erect; he could have been a champion welterweight. He has a shock of wiry hair, a clipped moustache, and bushy eyebrows. His mind and memory are clear and active; he talks with candour, humour, and dry wit. He loves to be with people and is never bored by them. His energy is proverbial. In the two weeks before his 95th birthday he made three trips to New York on General Motors business, chaired a board meeting of G.M.C., attended a reception for a new car showing in Toronto, and turned the first sod for Oshawa's new civic recreation centre — after refusing to allow the sod to be pre-softened. (Speaking of receptions, they say that he outlasts all others at a party.)

Mr. Sam is just as much at ease on horseback as with a trout rod, salmon rod, shotgun, or rifle. At school, he did some furious cycling aboard a monstrous 52-inch high-wheeler — no chain, no gears, powered directly by the rider's legs, and only a pint-size pilot wheel to steer by. He often covered the sixty miles to Toronto and back in one day; almost every day of the week he took a 17-mile swing

around the unpaved Oshawa-Whitby-Columbus circuit. He entered races at all the fairs that he could get to and won more prizes than his mother could find room for.

Horses became a hobby in the 1920s when Mr. Sam eased off in business to the extent of taking on a general manager. At first they were show horses — hunters, jumpers, saddle horses. "I had the advantage of a fine team of riders I had raised in my own home, my five young daughters." For ten years his horses and their riders competed at shows and fairs in Canada and the United States; they won more than 1,500 ribbons and 400 pieces of plate. Later, he turned to racing horses. The Parkwood Stable's colours, blue and gold, did not always finish first, but they were good for three Orpen Cup and Saucer stakes and three King's Plates, along with many other trophies. The farm was sold to E. P. Taylor in 1950 on the understanding that it would continue to promote, and to improve, the thoroughbred. As the National Stud Farm it has done just that.

When Mr. Sam grew up he became the owner of a motor boat that could travel from the Oshawa waterfront to Toronto Bay in ninety minutes. Fast, for those days. In 1925 he commissioned an R-class yacht to be designed and built to try to bring the Great Lakes championship in that class to the Royal Canadian Yacht Club, of which he was a member. He called it the *Eleanor*, after his youngest daughter. In the next year the



As a cyclist with James Lauchlan, right, and the 52-inch high-wheeler

Eleanor, skippered by Norman Gooderham, won handily.

Wisely, Mr. Sam has given up his salmon fishing lodge at Cap Chat, a summer haunt to which for forty years he took his friends to fish, to yarn, to talk business, or to thrash out details of his pet philanthropies (a word he never uses). He has also given up his pheasant limits near Owen Sound, but he goes back every autumn to Lake Erie to shoot ducks. There, he is president of Long Point Company, a century-old international duck-hunting club near Port Rowan. It's said he bags the limit without fail.

It is not surprising that so staunch an outdoors man should take such lively interest in teen-agers. "I don't

believe," he says, "that modern youngsters are any different from what they were when I was young: times are different, that's all. But there should be more places for them to go and more worthwhile things for them to do. Take the Boy Scout movement for instance. It has made a lot of good boys and good men, and will go on doing so. I'm strong for it."

Scouts, Cubs, Guides

He is indeed. In 1941 he presented the Oshawa District Boy Scout Association with 172 acres of land a short distance from the city and proceeded to plan and build a scout camp, soon to be known as "Samac". Hilly, wooded, veined with winding driveways and watered by the little Oshawa River (and a man-made lake), Camp Samac is not matched anywhere in Canada. It is equipped with superbly built log cabins, staff houses, a headquarters building, a council hall, an outdoors woodland chapel, a "trading post", an Olympic swimming pool, and acres of meadow for tenting. All summer long and well into the autumn the Scouts and Cubs have the run of it, Scouts one week, Cubs the next. Since 1943, more than 230,000 boys have used the camp. For Rovers and older Scouts, Mr. Sam has outfitted a bushland canvas training area, Adventure Base, on Lake of Two Islands in Haliburton. More than 600 trainees use it in summer. Nor have the Girl Guides been forgotten: Mr. Sam has given them a Girl Guide centre in the city, and their own "Adventure Base" in Haliburton.

The story of McLaughlin giving goes back well over fifty years. It is a record that begins in Oshawa and extends to the professions, to higher education, and to the nation. It is not part of any grand design or based on philosophical abstractions. It stems from traits that are inherent. So do not look for underlying motives; Mr. Sam will change the subject. The impulse is spontaneous; his judgment tells him where and when his help is needed.

When the McLaughlins moved into Parkwood early in the first Great War, they gave their former residence to the trustees of the Oshawa General Hospital which had been completed only five years earlier, largely through the efforts of Mrs. McLaughlin and her Women's Hospital Auxiliary. At first put into service as a maternity home, the residence was later sold to supply the nucleus of a building fund. To replace it, Mr. Sam and his brother George presented the hospital with a fully-equipped and modern maternity wing; shortly afterwards the Colonel added a separate residence for fifty student nurses. These gifts were followed at periodic intervals by a handsome Tudor house for the local Y.W.C.A. (a fine new gymnasium has just been added), Camp Samac, Girl Guide House, a war veterans' cemetery plot, instruments and equipment for the regimental band, instruments for the Salvation Army band, a bandshell in Memorial Park. The McLaughlin Public Library (500,000 books) was built in 1954; Mr. Sam has twice extensively enlarged it. "I grew up in

Oshawa and I do what I can for its welfare," is all that he will say about these benefactions.

The Colonel has always had a soft spot in his heart for Queen's University. To Queen's some years ago, he gave McLaughlin Hall, a large building which houses the university's Department of Mechanical Engineering and brought together under one roof facilities for graduate and undergraduate work that had been widely scattered. His other gifts to Queen's include a large subscription towards the finishing of Wallace Hall; Adelaide House (named for Mrs. McLaughlin), a residence for women; and the entire library of the late John Buchan, complete with all its furnishings and books.

Of all McLaughlin public benefactions the farthest-reaching is a charitable foundation established in 1951. Rich in resources and generous in operation, the R. Samuel McLaughlin Foundation is best known for its annual succession of fellowships which take graduates of Canadian university medical schools abroad for a year — sometimes two years, occasionally three — of postgraduate training. Wife and children may go with them — all expenses paid. Candidates must be residents of Canada, or intend to settle here. They are nominated yearly by individual heads of medical schools, who state what the candidates want to study, where they want to go, and who guarantee a teaching post upon return. Every medical school in Canada is eligible to nominate; no candidate has ever been turned down for lack of funds. There are more than 40 fellowship holders abroad today, mostly overseas, a few in the United States — wherever they will get the best training for the job they want to do. The fellowships have over 300 "alumni", all but one practising or teaching in Canada.

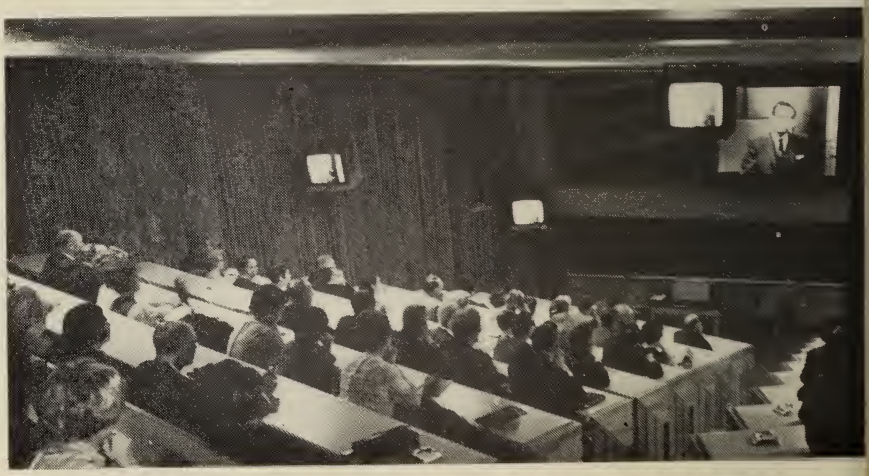
"We have two more fixed commitments that recur annually," explains J. C. Fraser, one of the Foundation's three trustees. "When Dr. W. E. Gallie died we established a special travelling fellowship in his honour. He was dean of medicine at Toronto and an old friend of Mr. Sam; they had planned together for the Foundation long before it saw the light of day. Through the Royal College we bring in physicians and surgeons from outside Canada to cover a recommended field. For instance, we have had the top man from France, the leading gynaecologist from Australia, the Regius Professor from Oxford, one of the leading Belgian physicians, and several others. That's one commitment. The other is a teaching scholarship at U of T in memory of Dr. John Oille, another close friend of Mr. Sam. Yet when our year is ended we have enough left over to find many other ways of helping people."

"Riches," wrote Francis Bacon in Elizabethan days, "are for spending, and spending for honour and good actions. Seek not proud riches, but such as thou mayest get justly, use soberly, distribute cheerfully, and leave contentedly."

That seems to sum up Mr. Sam's philosophy.



Dean Beckel delivering his Videotaped address



University of Toronto is generating international excitement with a new suburban campus conceived as a meandering, enclosed pathway linking clusters of faculties and facilities. . . . The big international Exposition 67 at Montreal is full of the latest ideas of its day. . . . Something powerful and new is stirring in Canada, something bound to affect architecture everywhere before long. This comment in the May issue of *Harper's* – it is by Edgar Kaufmann, jr., of Columbia University, whose critiques carry weight in the United States – draws attention once again to the distinctive appearance of Scarborough College. But what is happening *behind* that incredible façade? In the following article, Scarborough's Dean reveals that Scarborough's beauty (the word is used in the broad sense) is more than skin deep. Our story is a slightly condensed version of a talk Dean Beckel put on tape and delivered via closed-circuit television to the University of Toronto Alumni Council in May.

Teaching '67

William E. Beckel

When I think of educational television, I think of the transfer of information and the development of attitudes in large numbers of people where face-to-face teaching is difficult or impossible. There is no doubt in my mind of the effectiveness of television teaching. It is as useful as any other method of educating yet devised, when supplemented with audio tape and motion pictures and complemented by the efforts of the student with conventional pencil and paper exercises or computer-assisted instruction.

The educational chestnut attributed to Mark Hopkins sets forth that the only way to teach is to have one student, one log and one teacher. Today we don't need that and, even if we did, we couldn't afford it. Furthermore, thanks to technology – for example, television – we can teach far better with the few first class intellects available, and to very large numbers of students.

Many reports in educational literature point out that ETV has not lived up to its early promise. That is true, and the reason is this: only rarely has any educational situation been committed freely enough to television as a means of teaching. Instead, television has been used to supplement, and then rather apprehensively, the old methods. This has usually meant inadequate facilities coupled with inadequate programming.

To get the full potential from television as a teaching medium takes guts. There must be a positive dedication and that means the best in facilities and the best in programming. Above all, there must be no faint-heartedness at the top administrative level. This is our code at Scarborough College, University of Toronto, where we have built 50 per cent of the total educational program around television teaching.

It all started with the pressure of numbers. Failing a rapid expansion of student-places, there were going to be 10,000 prospective university students with no place to study in 1972. The Province of Ontario and University of Toronto met this with a decision to build two new colleges, each on a rather remote campus, one in the east of the city, the other to the west. Each was to take 5,000 undergraduates, with emphasis on the two most popular courses, General Arts and General Science. Accordingly, we now have Scarborough and Erindale Colleges.

To appreciate the use of television at Scarborough, you must understand the nature of the general courses at U of T. They are built around a sound general curriculum, with concentrations in many subjects but restricted enough in their options that there are extremely large classes in most of the first and second years. Of 5000 undergraduates, there may be 1200 in first year English and French, 1000 in first year zoology, botany, chemistry, physics, mathematics and psychology; 500 in first year economics, political science, sociology, history, and so on.

These large classes can be taught by trying to find many professors who would attempt in uneven fashion to lock-step through formal lectures, still facing at least a hundred students at a time. But there is a desperate shortage of really well qualified university professors. So we chose television.

If television teaching is properly done, one first-class teacher can be brought in front of large numbers of students, in small classes, simultaneously or at various times in the week. Every student can see and hear an educational presentation that has been well prepared, and evenly presented. The program is visually enriched to the full and both the information given by and the attitudes of the teacher are presented as well as they would be by face-to-face teaching – and probably better.

Many problems must be faced before this can happen. The problem of choosing and obtaining the right cameras and other technical equipment is enough to turn one back to the search for non-existent professors. But you can hire the doctors of television witchcraft. All you need is money and an inscrutable look as if you understood the meaning of such words as Vidicon, Plumbicon, Orthicon, gamma, stretching the black, sync generators, routing switchers, band width, video frequency, radio frequency distribution, studio monitors, classroom monitors, lighting level, and on and on.

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EXPLORATIONS

EXPLORATIONS

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The cost of printing this issue of *Explorations* is being contributed by the Associates of the University of Toronto, Inc., New York, on behalf of the University of Toronto alumni living in the United States.

COLOR, TV AND ALL THAT

It is interesting how revealing words can be. How often have you heard someone remark that "the Globe says . . ." or that they "watched it on television . . ."? The way we speak about media reveals something about the media; so it is not at all surprising that persons are already — perhaps a bit boastfully — remarking that, "I saw it in color . . . ," rather than, "I watched it on color television." When color is added you get depth and involvement and you **do** see it.

The point here is that color television is not television: it is color. It is a new, different, totally absorbing medium. Edmund Carpenter once wrote in *Explorations* about the new languages of radio, TV and film.[1] Now we must add another new language: color.

This idea, that color is a new medium, is fascinating in its complexity for it opens up an uncharted world for imagination and speculation. If television, still so new, has changed society, what then will even newer color do?

The subject is of special interest to the journalist for Marshall McLuhan's basic premise that the media are all different and that they shape the message has already obliterated the concept of fair, accurate and objective reporting. Professor McLuhan's conclusions put the journalist in the position of transmitting a message he cannot control. A vivid example comes from television where certain studio slipups can create effects on the home screen that can not be caught on the studio monitors. Given this, the journalist is already struggling

[1]Carpenter, Edmund, "The New Languages" in Edmund Carpenter & Marshall McLuhan, ed., *Explorations In Communication* (Boston: Beacon Press, 1960), pp. 162–179.

with the present media — radio, the newspapers, television: now he is faced with adjustment to color.

It would be pleasant to be able to provide a layman's guide to color as a practical tool for journalists, but it is impossible. The quest has only started. The first sip from the grail however is very heady wine indeed and there is some material which may provide leads if not answers. Perhaps they will stimulate someone else's thoughts.

This article discusses the results of four experiments related to color and/or television. The initial experiment has already been published in abridged form in Canada[2] and is being published this summer in the United States.[3] Only the conclusions are reported here. The second experiment has been published[4] but the conclusions drawn here are totally different. The other two experiments have not been published. All four merely open a few doors to the world of color TV.

Ralph Evans wrote in his book, *An Introduction To Color*, that "color is what you *do* see, not what you should see."[5] Color can be hot or cold or emotional. Color creates depth on a flat surface. The lore of color must now be rethought for television.

Before presenting color as a new language, it is essential to emphasize what Professor McLuhan has been saying. If you watch an event in person, hear about it on the radio, hear about it by someone else either in person or by telephone, read about it in the newspaper or see it on television, you are, in each case, dealing with a separate event. The media does not simply alter the message: it is the message. There is experimental support for this idea.

In one experiment, the Langs compared reports of persons actually present at MacArthur day in Chicago, when the U.S. general returned from Korea, with reports from persons who had seen the event on television.[6] The impact of the event was quite different on television. The crowds were more curious, less pro-MacArthur than the television made one believe. In another experi-

[2]Scanlon, Joseph, "Color Television: A New Language", in *Take One*, Volume 1 No. 4, April, 1967, p. 15.
[3]The full report of the experiment is to appear in the summer, 1967, edition of *Journalism Quarterly*.
[4]"How Color Beefs Up TV Ad Impact", in *Broadcasting*, Vol. 58 No. 20, May 16, 1960, p. 3.
[5]Evans, Ralph M. *An Introduction to Color* (New York: John Wiley & Sons, Inc., 1959), p. 185.
[6]Lang, Kurt & Lang, Gladys Engel, "The Unique Perspective of Television and Its Effect: A Pilot Study", in *American Sociological Review*, Vol. 18 (1953), pp. 3–12.

ment, the Langs selected a group of equally biased individuals to watch a Democratic political convention on television.[7] The groups watched the same picture — because the various networks were sharing camera coverage — but the commentators were different. The change of comment alone changed the event and changed the reaction of individuals to the event. The spoken word altered the picture that they saw.

It is a shame that more, similar experiments have not been tried with other media. Professor McLuhan has suggested that Carleton's School of Journalism attempt to investigate the telephone as a medium of communication. For example, what happens to the printed report of an event that is dictated by a reporter to a rewrite man by telephone compared to one written by the reporter in the office? What happens to a man when he prepares copy for radio or television rather than for a newspaper? Does he prepare differently and, if so, how differently? The area is most fertile for study.

Individuals react differently, too. No two individuals can observe an event precisely the same way. Since each individual relates what he sees or hears or feels to his own experience and attitudes, he sees or hears or experiences something different from everyone else. A simple example comes to mind.

Recently, CBC television carried an hour-long special on the Tijuana Brass, the popular musical group with their string-brass sound. I *listened* to the music watching Herb Alpert, his fingers, his technique because I play the trumpet myself.[8] A friend also *listened* (despite the fact the picture was there) because he liked the music. Another friend, a television professional, saw the production. She watched it for editing, staging, direction, etc. She said the show was excellent. Anyone who has ever worked in television news is familiar with the tape that is used as a cue out three seconds before the end of a filmed news clip. To the pro, the tape seems to crawl across the screen like a giant asphalt highway: the non-pro finds it very hard to see the tape even if he is warned that it is coming. If you do not understand this reference try spotting end cue marks on your screen when you watch a newscast: they are there. A fourth friend watched Tijuana Brass in color, the way it was meant to be seen. To him

[7]Lang, Gladys Engel & Lang, Kurt, "The Inferential Structure of Political Communications: A Study In Unwitting Bias", in *Public Opinion Quarterly*, Vol. 19 (1955), pp. 166–184.

[8]It is probably not unfair to report in a supplement to *Varsity Graduate* two years of marching and oom-paahing in the Blue & White band.

the staging was fantastic as the moving color portrayed the musical intent. (To me the forms were distracting.) He saw a different show. This is casual observation, perhaps, but it is a useful stimulus for experimental research.

A more serious test of color and black and white television was made with the help of CBC, Ottawa, on March 8, 1967, the day of the funeral of the late governor-general, Georges Vanier. The Vanier funeral was broadcast live and in color. Carleton Journalism students could have attended: instead 21 of them — all in the graduate year — watched the funeral coverage on television.

Although CBC has now separated its radio and television hockey broadcasts it has not learned that color is a new medium so the funeral was telecast with same picture, same voice over both color and black and white receivers. The 21 students were divided at random and split into color and black and white groups. They were told in advance that they would have to write a report of the funeral[9] and that they could add any comments they chose. What they heard was the same; what they saw was purportedly the same — except for the addition of color. The reports, far from being the same, were totally different.

The color group made more color references, perhaps the one completely probable outcome. But the color group also became far more emotional and wrote as participants rather than reporters. One student said, "the golden glow of the Basilica gave me the feeling I was there". Another described the funeral as "personal and awesome". Color added depth and life and absorption.

While the color group became involved, the black and white group took notes. The black and white students wrote far longer, far more detailed reports. An editor, checking on his reporters, would have faulted those in the color group for the thinness of their reports. A list was made of 10 key details (all mentioned by the commentators and seen on camera): editors would have expected all these details in well-done stories but the chances were two-to-one that a student who had included more than an average number of details was in the black and white group.

The initial discussions about this experiment produced a predictable result: it was faulted on the grounds that color television was a novelty. The novelty effect disturbed the results: reporters introduced to color were like children with a new toy. This possibility can not be rejected although two of the color

[9]The use of reports as a research tool avoids pre-judgements by the experimenter affecting the results. Journalism students are trained to write reports in a standard format. Deviations are therefore fairly readily identified.

group had been exposed regularly to color television for a year prior to the experiment and only one was a color virgin, so to speak. However, one further difference was so complete to suggest that the novelty effect is hardly sufficient explanation: perhaps novelty sharpens differences in degree and aids in their identification.[10]

The fourth difference was the sharpest of all and is best shown by a chart: the black and white group were far more aware of the commentators, the spoken word, and showed a pronounced irritation at many of their comments. This irritation was non-existent among the color group members.

	B & W	COLOR
References to Commentators	111	9
References by Name	67	1
Critical References	45	3

These differences are incredible. Color lectures on educational television could be experiments in futility.

The possibility of the discount of the spoken word was anticipated. The commentators were two well-known television journalists, Norman DePoe and Stanley Burke,[11] and they were heard, but never seen or named, throughout the broadcast. In a post-report questionnaire, the students were asked to identify the commentator inside the church (Burke). Color group members — though they were given a list of names to choose from — simply could not recall. They persisted in adding new names to the list.

Other experiments suggest other things about color. The individual's own conditioning affects his expectations and his reaction to color. Color is also different than black and white because in all probability it has a different impact on females than it does on males.

Another experiment conducted at Carleton, this time with students in the second year of the undergraduate program in Journalism, suggests that individuals have expectations tied to color and black and white. In this experiment,

[10]An intriguing support for this position came from an instructor at the Eastern Ontario Institute of Technology. The color-black and white hypothesis was mentioned to him. He replied, "I agree. I saw the Vanier funeral first on my own color set, later on black and white. It was not the same funeral." He was not aware of the Carleton experiment.

[11]Mr. Burke's position as anchor man on CBC late evening news had been a subject for discussion at the School of Journalism. Mr. DePoe was a former seminar leader at Carleton.

two random groups, 15 to 18 in each, were told they were to see a film. One group was told the film would be in color, the other group that it would be black and white. It is hardly surprising that three students, two in one group, one in the other, wrote that they expected to see a film about Journalism. The other results were surprising.

The reference to Journalism was the only overlapping reference. The black and white group expected content, perhaps a documentary. Two students expected an art film. Two suggested a foreign film, one from Europe. Three thought of an old movie. Six color students expected scenery. Two thought of comedy. Although color was the only operative word, one student said he expected to be disappointed. Another student summed up the general impression: color, she said, would probably mean "light comedy rather than deep and symbolic and of social significance". If the words "color" and "black and white" trigger such divergent responses, it is hardly surprising that color and black and white television produce such diverse results.

The most intriguing side of color, however, is the sexual side. Some years ago a U.S. firm did an experiment which purported to show that color enjoyed a three and one-half to one superiority over black and white television as a commercial medium. The results were calculated by assigning scores to answers to a questionnaire. In the chart below, the original test scores have been used to recalculate the percentage increase in the score when color rather than black and white is used. They might be called comparative effectiveness scores. In other words, the figure "41" means that the scores on the test questionnaire were 41 per cent higher for those who watched Perry Como in color over those who saw him in black and white. (The color and black and white groups were supposed to be matched groups: whether they were or not is not important to the discussion here.)

Percentage Increase Color/Black and White	PERRY COMO	DINAH SHORE	HALLMARK
Commercial Recall	41	25	40
Persuasiveness	75	25	80
Recall of Commercial Detail	75	25	71

Viewed this way, the figures suggest that Dinah Shore gained far less by the addition of color than did her rivals.

The original study had not done this kind of a comparison but it did suggest an explanation. In the surveying on the Dinah Shore show, "men as well as women were interviewed. . . ."[12] Presumably the surveyors expected the addition of men would give Miss Shore a boost. Instead, the experiment seems to have produced the opposite effect. Color had more of an impact on women than men. From childhood, women are more color conscious in our society.

Psychologists say that women dream in color and men in black and white. A check on this using a large sample of Ottawa schoolchildren found statistical support for the hypothesis that females are more likely to say they dream in color. This experiment was significant enough to justify another trial using more rigid controls and, when it is finished, more rigid analysis of the data. The initial problems resulted from the fact that many children replied, "both", and because isolating this group gave the significant results. Now we want to know what children mean when they say, "both".

At present, a Carleton researcher is doing a systematic review of the literature with regard to television and color. Hopefully, interviews will be conducted with film makers and photographers, with television producers and advertisers and with others who have a say in the use or non-use of color. Photographers seem to prefer black and white; but artists do not. Why not? Do film makers deliberately choose black and white because they know the image they want and the audience they want to attract? Are food makers ruining their reputations by distorted color commercials on television? Will hockey gain or lose viewers as it goes to color? What about other sports?

If all this suggests anything it suggests that we know all too little about media and the way we use them and the way they affect us. Yet media can change society. Color could change our attitudes about politicians and government and society. It could change our government. It could alter male-female differences if it permeates our males. We know so little we can dream very wildly indeed. Admittedly, some of these statements sound inane or outrageous. Sometimes it is necessary to be provocative to stimulate thought. However, it is also true that in the world of media we know so little and we have tested so little that the wildest concept may be far from fantasy. Suppose someone had forecast that a radio drama of an invasion from Mars could cause a panic? The effects of media are mysterious and unchartered.

[12]"How Color Beefs Up TV Ad Impact", in *Broadcasting*, Vol. 58 No. 20, May 16, 1960), p. 3.

If the journalist is to get across to his audience what he wants to get across perhaps he will have to be taught to report in a way that takes into account the fact that the media shapes the message. Color complicates this. The only thin ray of hope for a temporary breathing spell is that color sales are slow.

T. Joseph Scanlon, Associate Professor and Director School of Journalism, Carleton University.

SPACE IN PHYSICS AND COSMOLOGY*

Not isolated, but interacting, spaces and fields.

The nature of "space" has been variously interpreted as: the "order" or the "positional quality", the "container" of, or that "contained" by, material objects; the "independent cause" of the inertia of bodies acting upon, but not acted on; a "continuum" or a "field"; an empty "void"; or an abstract sum total of "places". The Atomists laid emphasis on the physical character of space, the Platonists stressed its abstract geometrical and mathematical aspects, while the Aristotelians propounded its ontology. Max Jammer[1] has admirably sum-

*This article is an appendix to the author's "Predicting Scientific Prediction" which appeared in the previous issue of *Explorations* (Spring, 1967).

[1]Max Jammer, *Concepts of Space* (Cambridge, Mass.: Harvard University Press, 1957).

marized these views, but the founder of modern mathematical field theory, J. Clark Maxwell, declares:

> We cannot describe the time of an event except by reference to some other event, or the place of a body except by reference to some other body.[2]

Physical spaces or fields are both created and measured by interacting physical processes. How can we best represent such spaces for both "explanation" and "exploration" in our present scientific and social context?

Neither mechanical, nor mathematical, but physical models.

Nineteenth-century physicists sought to explain electromagnetic phenomena in terms of visually conceivable behaviour of invisible "ethers" (aethers) obeying the laws of Newtonian mechanics. However, twentieth-century physicists found that the movement of "ponderable matter" *through* an "imponderable ether" eluded detection by any experiment they could devise. After accepting the mathematical consequences of Einstein's relativity postulates, most scientists abandoned the ether as a "meaningless" fiction. Nevertheless, Einstein himself insists:

> According to the general theory of relativity space is endowed with physical qualities; in this same sense, therefore, an ether exists. In accordance with the general theory of relativity space without an ether is inconceivable. For such a space there would not only be no propagation of light, but no possibility of the existence of scales and clocks, and therefore no spatio-temporal distances in the physical sense. But this ether must not be thought of as endowed with properties characteristic of ponderable media, as composed of particles the motion of which can be followed; nor may the concept of (mechanical) motion be applied to it.[3]

However, Einstein's mathematical representations, like all mathematical theories, are prisoners of their own logical structure, of Yes-OR-No thinking — the paradigm of rationality. Today's "crisis in physics" therefore demands new physical models, that subserve neither mathematics nor mechanics, to make the invisible physical environment more "visible", without ignoring its non-visual aspects.

[2]J. Clark Maxwell, *Matter and Motion* (New York: Dover Publications, n.d.), p. 12.
[3]Albert Einstein, *Essays in Science* (New York: Philosophical Library, 1934), p. 111.

Both full vacua and empty plena.

The opposite of a *plenum* of something physical, is its absence or its *vacuum.* (See Figure 1, page .) We thus avoid confusing the relative vacua of physics — "empty space" — with the abstract *void* of philosophy, an absolute emptiness, where nothing can happen. The "fields" or vacua of higher levels resolve themselves into the "particles" of successively lower levels of *apeiron*[4] organization. By thus broadening the vacuum concept, we can express not only the absence of *matter*, but also the absence of *ether*, and that of other kinds of particles, relative to their own specific levels. A vacuum of matter then refers to the absence of matter particles, but does not preclude a field, or a space, or an idealized plenum of ether particles that, upon descending the physical scale of magnitudes, resolves itself into still other particles which may again, by their absence, constitute a vacuum.

Both limited, and unlimited, macro- and micro-universes.

Reaching beyond the galactic portrayals of today's cosmologists[5] Figure 1 suggests possibilities of open, interpenetrating, rather than closed, or separate, physical universes. It also implies that every individual observer would become the centre of his own particular universe, whose boundaries would depend not merely upon the limits of electro-magnetic wave propagation but would also allow for other known, and as yet unknown, means of "communication". Moreover, it hints that electro-magnetic radiation from distant galaxies would be reduced not only in amplitude, through *outward* distribution ("spherically"), but also in frequency, through *inward* diffusion ("red-shift").

In addition, the model leads us to expect definite thresholds of velocity and amplitude in process activity at each level — *energy* analagous to particle motion — minima and maxima necessary to maintain relatively stable forms of organization. We may also anticipate diffusion of "energy" both "inward" and "outward", upward and downward, in Figure 1. Physical pulsations, movements, changes may tend to reinforce or cancel each other within the same or

[4]Anaximander's *apeiron*, postulated in a narrower sense, as the ultimate physical base for all physical phenomena. See Charles H. Kahn, *Anaximander and the Origins of Greek Cosmology* (New York: Colombia University Press, 1960), p. 199.
[5]Jagjit Singh, *Great Ideas and Theories of Modern Cosmology* (New York: Dover Publications, 1961).

between different levels. When this occurs in a relatively closed system, we have transfers of "energy" through positive (self-amplifying) and negative (self-attenuating) feedback with their corresponding thresholds of instability. Of particular interest are thresholds and "triggers" involving perceptible changes of physical state, chain-reactions, trend reversals, and major transformations of "energy" from one level to some other in the physical hierarchy (such as Heisenberg's electro-magnetic energy quanta, Hubble's cosmic red-shift, Joule's mechanical equivalent of heat, and Einstein's mass-energy conversion) also from the physical to the biological, psychological, and social domains.

Interfacing spaces in both sciences and arts.

Such a hierarchy does not presume a replication of universes within universes, differing in magnitude only; but it does suggest the "evolving" and "devolving" potentialities of essentially different, interrelated forms of physical organization — both infra-electronic and supra-cosmological — each with its own distinctive "laws" and characteristics, resulting from endless interaction, and growth or decay. Their "characteristics", "traits", or "properties" *are* their interplay. Particles as processes are *not contained* in abstract space but *continually create* their own multi-level physical spaces, which are *both continuous* in their discontinuity *and discontinuous* in their continuity. We may represent some aspects of these physical spaces by three-dimensional Euclidean geometry, by infinite Riemannian manifolds, by Einstein's space-time tensor equations, by both "visual" and "acoustic" models[6] as seemingly most appropriate for "explanation", or for "exploration", but never completely.

For the spaces of the "scientist" do not exist in isolation. They are in constant interplay with the "spaces" of the "artist", and of people who claim no tie to either art or science. They are continually interfacing with an infinitude of spaces[7] created by other than "purely physical" processes, determined by the prevailing sensory biases and cultural environments of actual perceivers.

Barrington Nevitt, Consulting Engineer.

[6]Milič Čapek, *Philosophical Impact of Contemporary Physics* (New York: Van Nostrand, 1964), p. 399.
[7]Edmund Carpenter and Marshall McLuhan, "Acoustic Space", in their *Explorations in Communication* (Boston, Mass.: Beacon Press, 1960), pp. 65–70.

NOTES TO FIGURE 1

1 Mean free paths of some qualitatively distinctive and speculatively imagined physical particles, described in terms of terrestrial units, indicating the relativity of physical vacua.

2 Smaller particles at lower levels of organization may constitute the physical spaces — the fields — for larger particles at higher levels.

3 Scales of magnitude lose significance at the extremes — maxima and minima — of physical organization, since comparisons are no longer possible.

4 Events at the terrestrial mechanical level are measurable in terms of mass space, and time units referred to physical processes at this level. Events at other levels in the hierarchy, although "governed" by their own "laws", are normally referred to the mechanical level by interpolation and extrapolation.

5 Limits of resolution for events at each level depend upon the ultimately particulate nature of the physical processes available as reference standards. Although the lowest resolvable level may serve as a standard for all others, the validity of interpolating and extrapolating mass-space-time units, and "laws" derived from one level to another, requires determination of where "discontinuity" supersedes "continuity", and what conceivable transfers and transformations are actually possible.

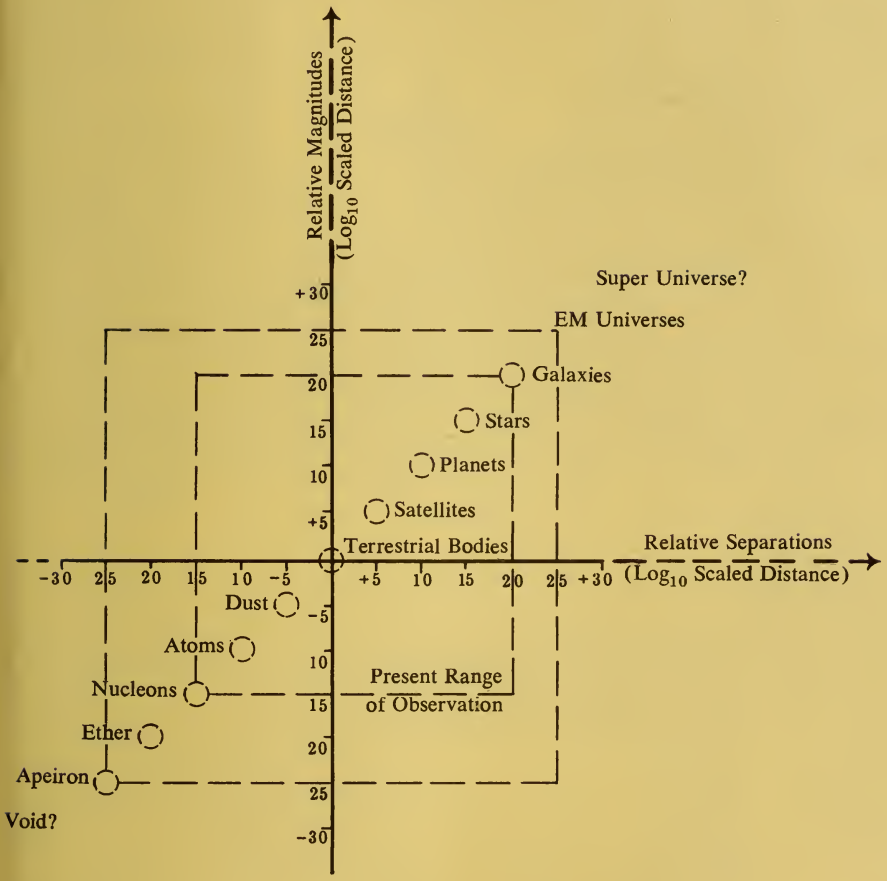
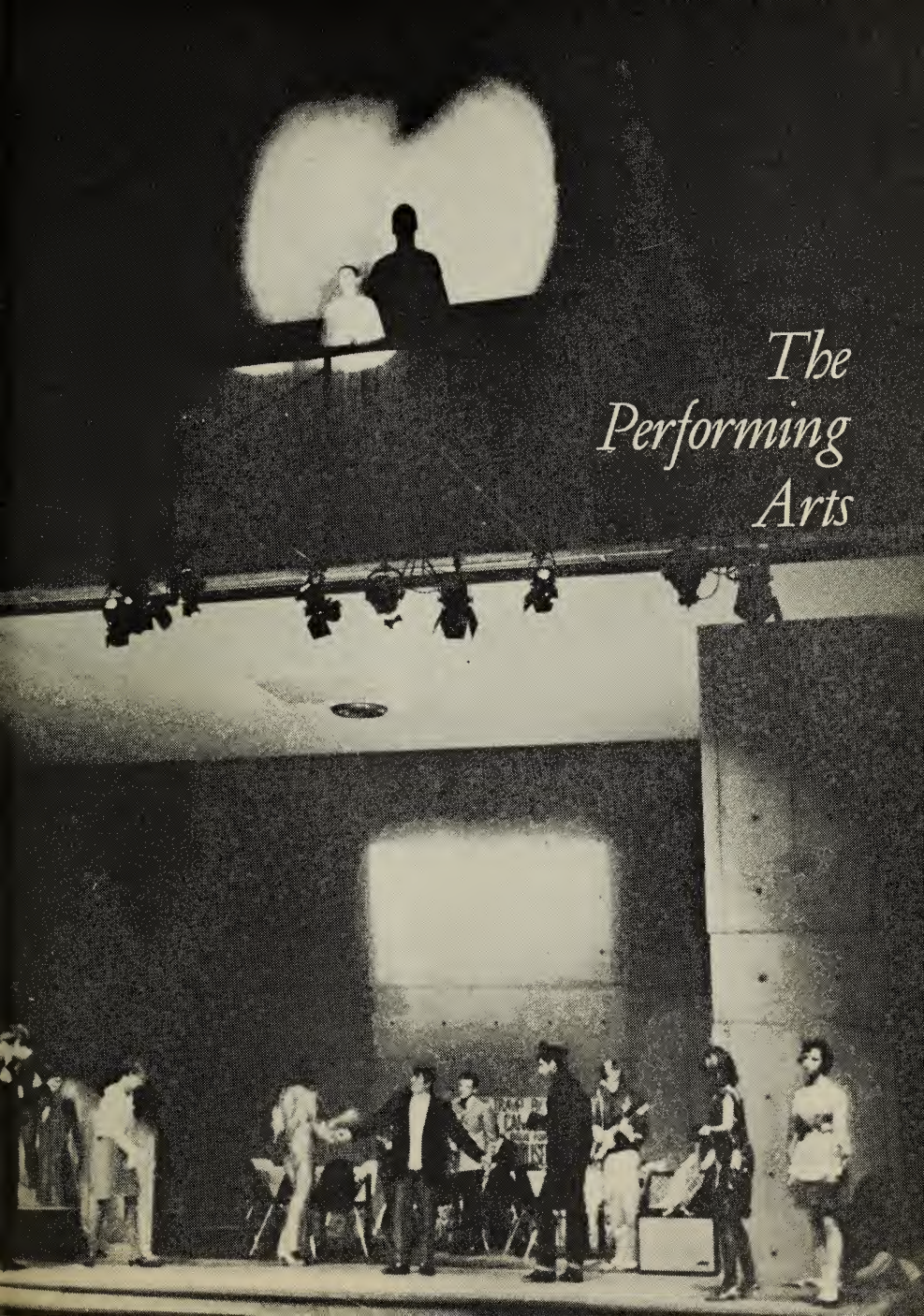
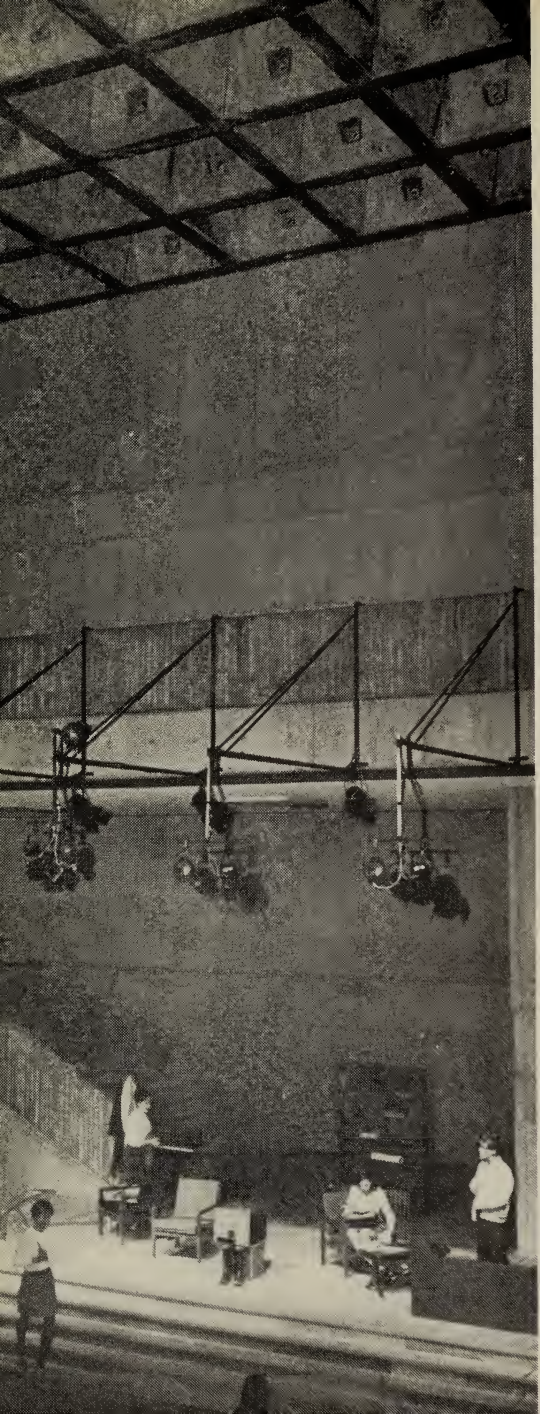
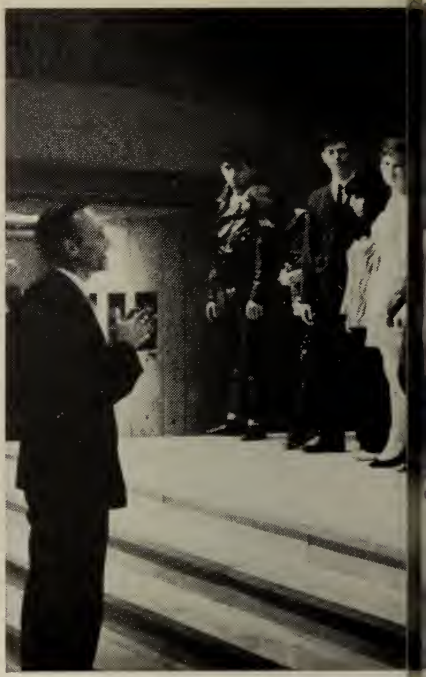

Relative Magnitudes
(Log10 Scaled Distance)
Super Universe?
+30
EM Universes
25
Galaxies
20
Stars
15
Planets
10
Satellites
+5
Terrestrial Bodies
Relative Separations
(Log10 Scaled Distance)
-30 25 20 15 10 -5 +5 10 15 20 25 +30
Dust
-5
Atoms
10
Present Range
of Observation
Nucleons
15
Ether
20
Apeiron
25
Void?
-30

Figure 1



The Performing Arts





Scarborough's stairway gives an actor scope

Left: the lofty Meeting Place becom a theatre for the first performances l the Scarborough College Drama Clu All first- and second-year students, t players rehearse "A Resounding Tinkl by N. F. Simpson, at the foot of t grand stairway.

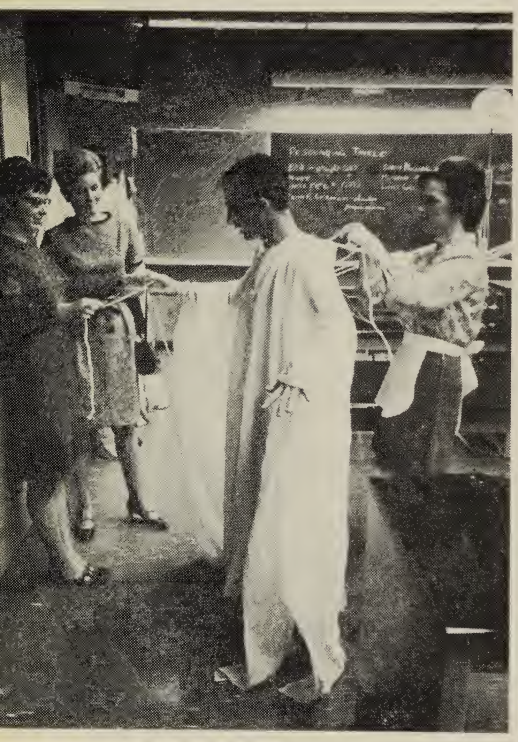
Above: Director John Smith of Colle English department gives his rehears instructions to cast of "Everyman", second Drama Club presentation. Te porary stage on which the actors sta projects from the bottom of the stai

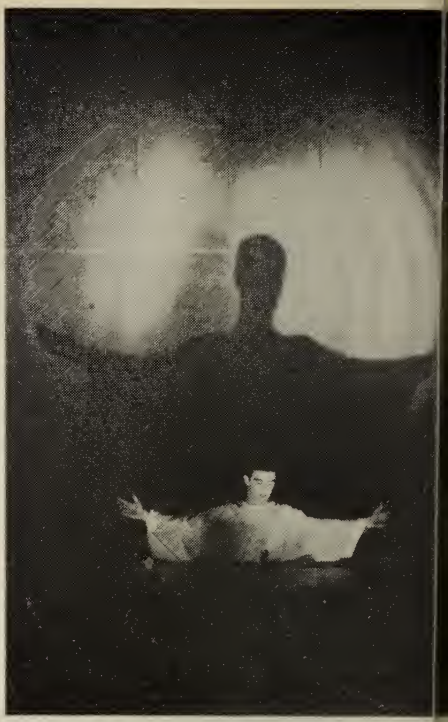
Right: science laboratory does doub duty as co-educational make-up room f the student actors.

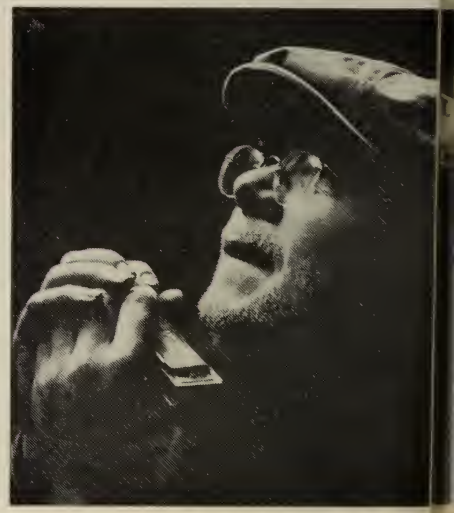




Below: Jerrold Steinberg, who plays the Deity in "Everyman" gets help in preparing for his dramatic appearance *right*.







Right: Douglas Urquhart, a second-year student, is the old harmonica player in "A Resounding Tinkle".

There's no Willan school of composition — just first-rate composers who studied under him and then went on "to find out musical tunes", each of them after his own fashion

A great Canadian who coaxes lovely sounds from average voices

KEITH BISSELL

DURING RECENT YEARS there has been a notable growth of general interest in the arts in Canada. The steady crescendo of the past ten years has led inevitably to the cultural explosion of 1967 with artists, composers, writers and architects working overtime to fill the current demand for their products. The frenetic artistic climate of centennial will doubtless subside in 1968, but the impetus generated by this special celebration is bound to carry over into the future years.

While rejoicing in the abundance and quality of Canada's creative talent today, it is fitting that we should acknowledge our indebtedness to those leaders whose labours throughout the bleak years resulted in the present flowering of the arts.

Prominent among those who "found out musical tunes" and inspired others to do likewise is Healey Willan, who has been a key figure in Canadian music for over one-half of this century.



DR. HEALEY WILLAN



Right: Dr. Willan conducts St. Mary Magdalene Choir in Hart House

When he arrived in Toronto in 1913, he proceeded with a vigour that has become legendary, to devote his immense musical gifts to the enrichment of the musical life of this country. In his multiple rôles of composer, teacher, conductor, organist, and renowned authority on church music, he exerted a profound influence on every conceivable aspect of Canadian music.

Willan, the teacher, demonstrated his virtuosity first at the Toronto Conservatory, and later, for many years, at the University of Toronto. Among musicians, he was unique in his ability to clothe the dry bones of theory in the sparkling garments of wit and enthusiasm combined with scholarly insight. As a teacher and composer, Willan seems to have been guided by the philosophy epitomized in Yeats' lines: *Nor is there singing school but studying / Monuments of its own magnificence.*

His students were taught the "tools of the trade", they received thorough instruction in traditional harmony and polyphony, they were given a broad exposure to the great works of the past, but beyond this, each was encouraged to develop as the spirit moved him. It is a further comment on his excellence as a teacher that he created no "school" of composition. Although most of the composers in English-speaking Canada today studied under Willan at one time or another, there is a wide diversity in their styles of composition.

Willan, the composer, is the one Canadian in this field whose reputation is world-wide. Although he breaks no new paths, his writing, subtle and highly original, makes a universal appeal with no compromise to vulgarity. The language is familiar, there is no self-conscious attempt to be different, and yet the best works are illuminated by an individuality, a fresh manipulation of traditional devices that lifts them into the realm of genuine inspiration. Much of Willan's most inspired work is contained in the writing for voices where he displays a mastery and insight gained from a lifetime of close association with choirs. His numerous choral pieces are invariably distinguished by a felicitous union of text and music, by superb voice-leading and by a realistic treatment of voice ranges. The subtleties of the writing present a challenge to the finest choirs, and yet most of his choral works are at least technically accessible to amateur groups. In the two great Preludes and Fugues, and in the Introduction, Passacaglia and Fugue, he has created at least three works that seem destined to enter the permanent repertoire of the organ.

Keith Bissell is Chief Supervisor of Music, Scarborough Board of Education



The antecedent of these pieces is Bach, and yet each is stamped with the Willan hallmark of meticulous construction and high originality. As in the choral writing, his highly idiomatic approach to the organ stems from extensive practical experience on the instrument.

From the beginning of his career, Willan has been closely associated with choirs. Through his remarkable ability to secure lovely sounds from average voices, he has given, and continues to give pleasure to thousands of listeners, and inspiration to countless aspiring choral conductors. His Tudor Singers, active in Toronto for many years, established standards of choral excellence which served as an inspiring model for all choirs in this country.

Undoubtedly, Willan's first and most enduring love is for the music of the church. And so, we find the very essence of his genius concentrated in the regular services at the Church of St. Mary Magdalene where he has presided for 46 years over a musical service of unique beauty and quality. There, one may still hear his magnificent improvisations on the organ, enjoy the pure beauty of his choir, and from time to time hear the first performance of a new composition. It is quite possible that his most significant contribution to Canadian musical life has resulted from his work at this church, for his disciples, former choir members now widely scattered across Canada, have carried his gospel of musical excellence to all corners of the country.

In his several musical roles, Willan, no ivory-tower musician, has always been closely identified with the day to day pattern of life around him, and his most important works have been written to meet real needs of society. Although he has composed brilliantly for the organ virtuoso, for the professional operatic stage, and for the coronation of monarchs, he has devoted his talents with equal success to the amateur choir, to the service of the church, and to the demanding art of teaching the young.

Now enjoying good health at the age of 86, his continuing vitality and productivity are truly phenomenal as demonstrated in the brilliant success of his opera, Deirdre of the Sorrows, re-written, and staged for the first time last year by the Toronto Opera Company. Although the final verdict on the status of the composer must always be left to posterity, the vital importance of Willan's contribution to the musical growth of Canada in this twentieth century is an indisputable fact of history. It is a fact which has earned him a high position in the affection and esteem of his countrymen; it is a fact which places him permanently in the gallery of great Canadians.





Our new Men of the Theatre

FOR TWO YEARS a selection committee searched on this continent and across the seas for the man to head the University's new Graduate Centre for the Study of the Drama. This spring they found him – in Trinity College, University of Toronto, where he has been teaching English since 1960. On July 1, Professor Brian Parker, *left*, becomes Director of the Centre.

Born in Cheshire, educated at the Universities of Liverpool, London and Birmingham, he took his Ph.D. at the Shakespeare Institute, Stratford-on-Avon. As a Fulbright Fellow, he spent three years lecturing at the Universities of Texas, Wisconsin and Colorado. He has held research fellowships in California and Washington, D.C. Six months of last year were spent at the British Museum (as a Canada Council Senior Fellow) completing a volume for *The Revel Plays*.

One of Professor Parker's many articles on the theatre and its people won the University of Western Ontario medal as the best Canadian academic article of 1963.

He is 35, married with one child.

Late in May, President Claude Bissell announced a second important appointment in the Centre – Leon Major becomes Theatre Director after six months in Europe on his second Canada Council research fellowship.

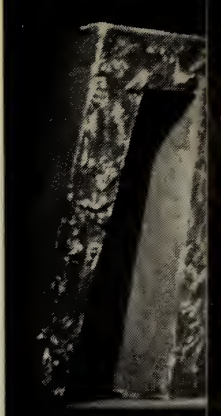
One of many widely-known U of T graduates who took his basic training in the theatre under Robert Gill at Hart House, Mr. Major has been artistic director of the Neptune Theatre Foundation in Halifax for five years – creating the respected company featured at both Expo and Festival Canada this year.

Besides running the Hart House drama program and collaborating in the Opera School, he will continue to direct professionally.

STUDY OF THE DRAMA (II)

There will be no "soft" degrees

ROBERTSON DAVIES

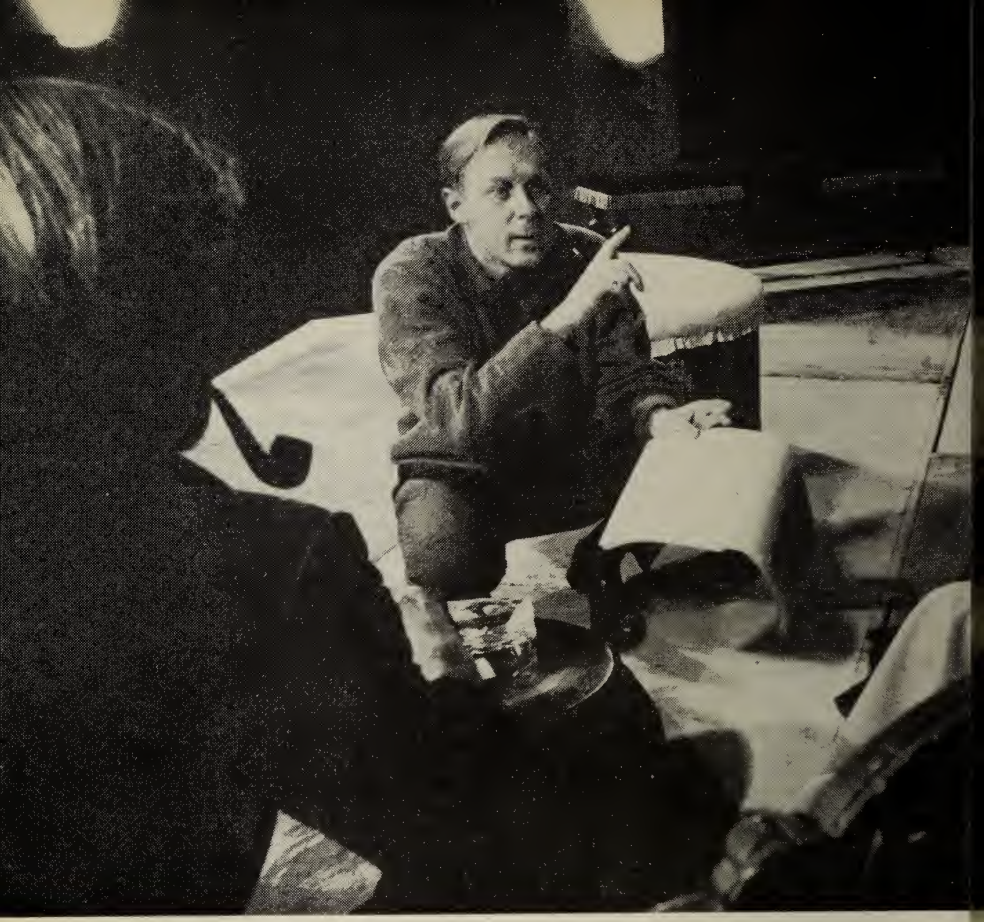


FROM THE ELDER statesman Polonius, who played the role of Julius Caesar when he was at the university, to Lord Fancourt Babberley, whose passion for amateur theatricals is the mainspring of the plot of *Charley's Aunt*, the link between university and theatre was strong, but unsupported by academic sanction. Writing less than a century ago about the Amateur Dramatic Club of Cambridge, F. C. Burnand thought himself facetious when he proposed that the university should possess a Garrick Scholarship, a Roscius Professor, and grant a degree of F.R.A. (First-Rate Actor). But within our own time we have seen something not unlike Burnand's suggestion realized in a score or more of universities that offer instruction in the arts and techniques of the theatre. Many of these institutions have been at work long enough to be weighed in the balance. The University of Toronto took full account of what university theatre schools have shown themselves able to do when it instituted its Graduate Centre for the Study of Drama.

The decision was that the bias of the Centre should be academic. Universities may well be confident of their ability to offer instruction in the literature, criticism and history of drama; they cannot with equal assurance undertake to train artists of the theatre. But academic instruction without some practical theatre work, on the best level that can be attained, is not good enough for people who may be

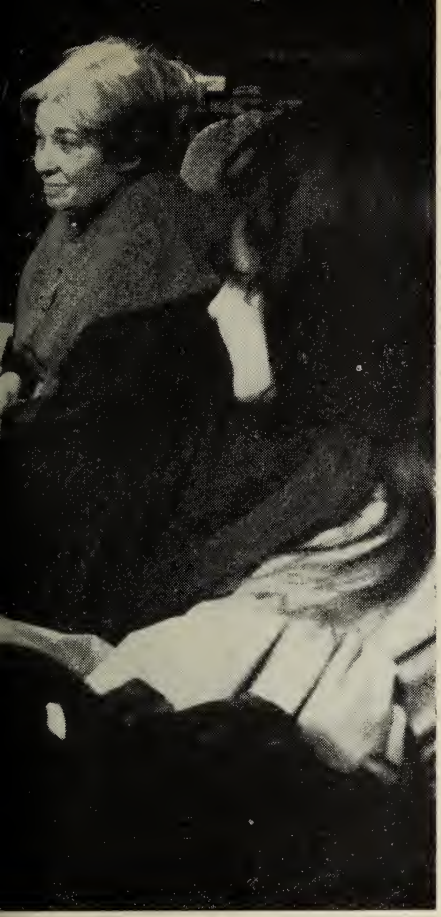
Right: Leon Major, newly-appointed Theatre Director of the Centre for Study of the Drama, photographed in Hart House with some of cast of *Edward II* in the background. This was the play he directed for the University last season.





concerned with drama as teachers, critics and possibly as actors and directors. Therefore the Drama Centre (to use its short name) offers experience to its students as men and women of the theatre. All of them must do quite a lot of practical work; some of them may do a great deal.

The University is fortunate in having a long history of theatre work, and possesses in Hart House Theatre one of the few historic playhouses in Canada. Not only is it a fine example of theatre design as it was practised half a century ago; it is a theatre filled with memories, for in it some of the best actors of our flourishing professional stage made their earliest serious appearances. The still youthful Canadian theatre acknowledges several cradles; Hart House Theatre is certainly the handsomest of these in a physical sense, and as an early influence toward high artistic and professional achievement it has no clearly visible rival. When the University de-



Left: David Gardner working with some of the cast in the Hart House production of *The Father*

cided to put Hart House Theatre in the care of the Drama Centre it associated its new creation with a vigorous tradition.

Over the years the theatre building has become somewhat worn; the seats creak, the auditorium lighting preserves the fashionable gloom of the 'twenties, and the revival of some nineteenth century techniques of stagecraft have made its stage inconvenient. The Centre has embarked on a three-year plan to renovate the theatre, without greatly altering its appearance. Already the stage has been almost doubled in size, and lights for the forestage have been concealed in the ceiling; a new lighting installation is to follow; the theatre will be re-seated and re-decorated. Nothing can be done about the fact that the stage does not permit of "flying" (hoisting scenes out of sight overhead) or of any installation under the stage; when Ophelia is buried at Hart House it must be in a raised tomb. But everything that can be done is being done to improve and preserve an historic theatre.

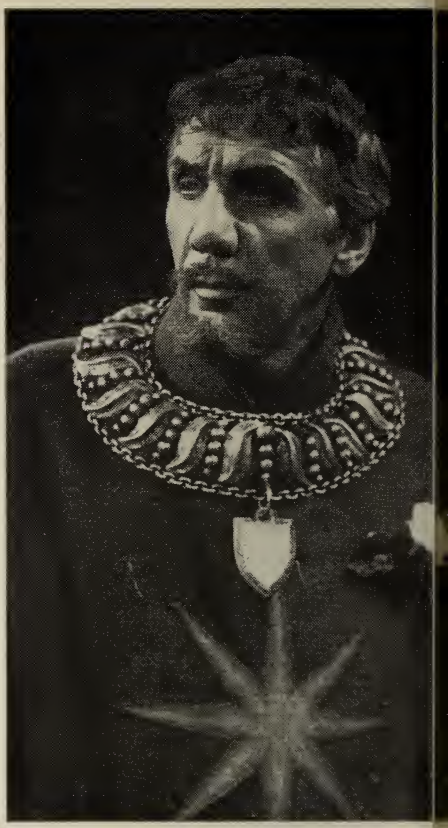
Of course the Drama Centre needs an experimental theatre as well, smaller, more versatile, and less expensive to operate, and if a benefactor were to offer such an adjunct to the Centre, its work could be greatly extended. But it is lucky in the possession of Hart House Theatre, and means to cherish it.

The process of cherishing has begun, and was demonstrated during the academic year that has just closed. Because the Centre offers study in the drama of many languages, and is not merely a sept of the English department, the first program was chosen to make this clear. From the classics, Aristophanes' *Lysistrata* was offered first, followed by Giradoux' *Ondine* from French drama; English was represented by Marlowe's *Edward II*, and the season concluded with Strind-

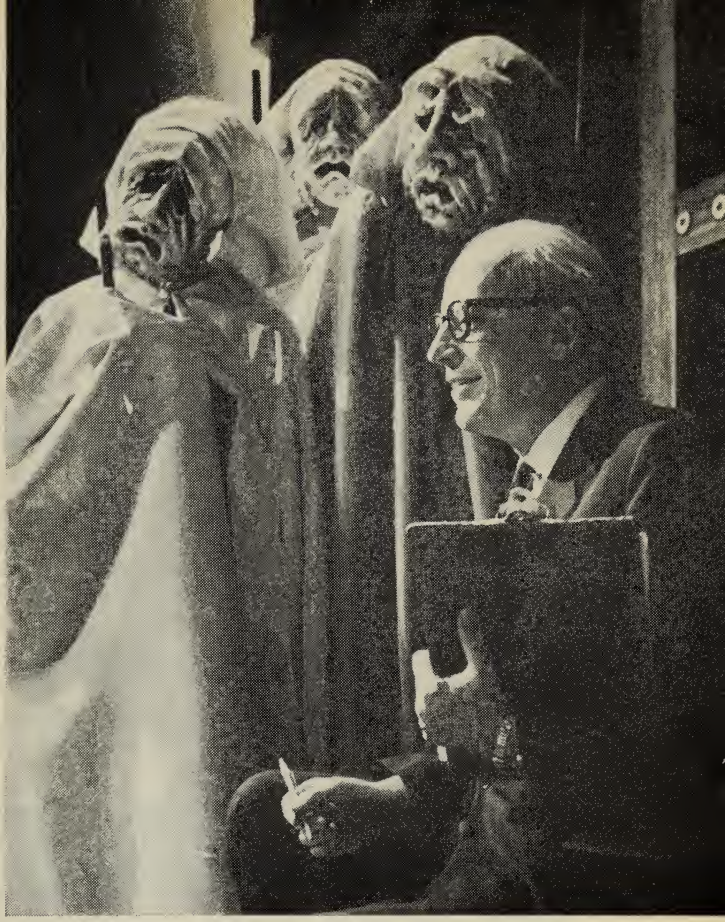
berg's *The Father*. This was a heavy season for the theatre staff, and it was only by extraordinary exertions that it was made possible. The first three plays have large casts and call for elaborate productions; the fourth, as it happened, was given a most distinguished setting which laid heavy burdens on the technical staff. Apart from the professional employees of the theatre 125 student actors appeared in these productions, supported backstage by 170 student workers.

If the resources of the theatre were strained to the uttermost, the response of the university audience was correspondingly enthusiastic. Attendance for the season averaged more than 95 per cent of capacity. The public offerings of the Centre reached their mark with a force no one could have foreseen.

It was plain that the choice of directors for the plays was important in ensuring their popularity. For this season Robert Gill, who had carried the full weight of the theatre for twenty years, decided to devote all his energies to organizing his new work as an instructor in the Centre, and therefore visiting directors were needed.



Lysistrata was given a witty, rapidly-paced production by Herbert Whittaker, and it was he who first demonstrated the possibilities of the greatly enlarged stage. *Ondine* was directed by William Hutt, who elicited magic and elegance in a degree most unusual in a university production. *Edward II*, which calls for the deployment of a very large cast, and the explication of a complex and unrelenting plot, fell to Leon Major, and he brought it off with style. David Gardner gave *The Father* the detailed, psychological study it demands, and for which he is well-known; it was a telling contrast to the plays of external action that had preceded it. The season was a tribute to the influence Hart House Theatre has exercised, for all the directors except Mr. Whittaker had worked there as undergraduates; when the theatre called on



Left: William Hutt, director of *Ondine*, is seen as Warwick in *Henry VI*, one of the many Shakespearean roles in which he has performed with distinction at the Stratford Festival

Right: Herbert Whittaker with three of the masked players he directed in the Hart House production of *Lysistrata*

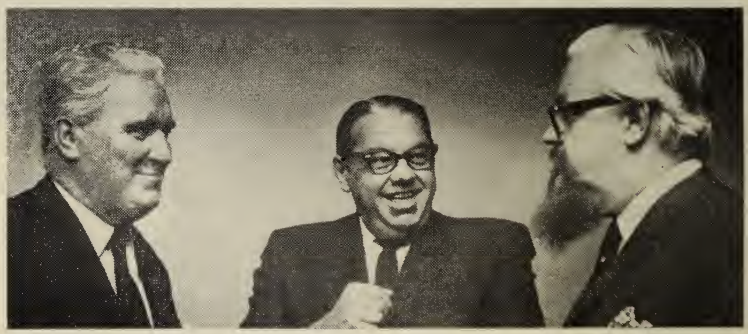
its distinguished sons for yet another chapter in its chronicle, they responded with their talent, but equally with their loyal affection.

The first theatre season under the direction of the Centre must be accounted a success, and it plans to follow next year with an equally varied program: Lorca's *The Sheep Well*, from the dramatic literature of Spain, *Caste* by T. W. Robertson (of which this is the centennial year), *John Gabriel Borkman*, by Ibsen, and *The Devils* by John Whiting. But the Centre did not confine its theatrical activity to its own presentations; it was able to give assistance and patronage to some of the productions of the lively and ingenious Poculi Ludique Societas, which presents plays of the late medieval and early Tudor period on campus. The practice of bringing a distinguished man of the theatre to lecture publicly may be extended. It is the purpose of the Centre to foster drama of high quality

in the university beyond the limits of its immediate work.

By means of the productions it sponsors, and by some technical courses the Centre provides chances for all its students to engage in the practical work of the theatre, under circumstances and with leadership appropriate to a great university. The scholarly work of the Centre is pursued in seminar rooms where the dramatic literature of all the languages in which the University offers instruction may be examined, with supporting study of art, music and history as these disciplines bear upon the theatre. Graduates of the Centre, whether with the M.A., Phil.M., or Ph.D. degrees, will be equipped fully according to the University's standards for all its graduate work.

Why graduate work? Here the academic bias of the Centre is clearly apparent. Specialization of the kind the Centre offers cannot profitably be undertaken by students who have not already acquired the academic foundation of which the B.A. is evidence. The Centre offers no "soft" degree. In time it may appear that some Ph.D.s from the Centre have also acquired the F.R.A. to which Burnand alluded, but they will get it in the only place that such a degree is fittingly and unmistakably awarded — and that is the professional theatre. The Ph.D. will be an academic achievement, appropriately tempered with theatre experience. And it is from this theatre experience that the sense of excitement, of renewal and discovery will come, without which the academic work becomes divorced from the art. The Centre is determined that its students shall never lose sight of the fact that they are dealing with an art.



Alan Dent, *left*, film critic of the *Illustrated London News*, who gave two lectures on "The Fine Art of Criticism" here last year, is with James E. Hozack, business manager of Hart House Theatre, and Dr. Robertson Davies, author of the article above. The Master of Massey College, Dr. Davies is also an author, playwright, newspaper publisher and Professor of English. He was a member of the committee (headed by Dean Ernest Sirluck of Graduate Studies) which drew up the master plan for the new Centre and recommended the people to make it work.

MEETING PLACE

Journal of the Royal Ontario Museum

VOL. 1, NO. 10, SUMMER 1967

INTRODUCTION

SLOGGING THROUGH MUD

INDIANS OF PARRY ISLAND

SMALL FINDS FROM THE ATHENIAN AGORA

A LIBRARY OF FISHES

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INTRODUCTION

PETER C. SWANN, Director

The wide diversity of the articles in this number of *Meeting Place* shows how world-wide are the interests and activities of the Royal Ontario Museum. This great institution, though supported by the Province of Ontario, carries the flag of our scholarship across Canada and of Canadian scholarship throughout the world. It would be difficult to cite an organization which does so much with so little.

During this year and next, eighty publications, large and small, on the arts and sciences, will have been written—though it is difficult to see how we shall be able to publish them on a publication grant of $14,000 per year.

In the area of purchases, the Museum has just established a Purchase Trust Fund of which the interest may be spent to fill gaps in the collections. All donations, large or small, are welcome to a fund which we hope will grow steadily over the years and enrich the country. How, as Director, one wishes such a fund had been established 20 years ago! Only those in the Museum realize what we have lost!

Nevertheless, a well-tempered optimism leads us to have confidence in the future of Canada's greatest Museum. Membership is increasing. The Planetarium is rising from the ground, new galleries are soon to open and plans have been drawn up for others too-long neglected. A new awareness is abroad of the greater role the R.O.M. can and wishes to play in an expanding society.

SLOGGING THROUGH MUD

In an unusual winter archaeological dig, ROM *teams investigated the site of a pottery in Brantford*

DONALD B. WEBSTER, Curator of Canadiana

Archaeological digs are not a normal winter pastime in Canada—not if there is any choice—nor, at least in the past, has digging been a customary procedure in exploring nineteenth-century industrial operations. The choice of timing, however, was not ours. Perhaps the Brantford *Expositor's* opening headline, "Searchers Slogging Through Mud, Probe Pottery Firm Site", set the tone for what was in effect an archaeological salvage investigation of the first salt-glazed stoneware pottery in Canada.

The Brantford, Ontario, pottery was established in 1849 by Justus Morton, late of the Clark pottery at Lyons, New York, and operated almost continuously, through seven proprietors and two totally destructive fires, until about 1905.

Salt-glazed stoneware pottery, fused and vitrified, impervious to liquids and inert to acids and alkalis, was the most important material known for food storage and preservation containers during the nineteenth century, before the advent of such modern refinements as vacuum canning, refrigeration, or freezing. The Brantford pottery, as its primary production, made a great variety of container stoneware, but produced as well a full range of molded and cast wares, from bowls to teapots, and from pitchers to spittoons.

The Brantford salt-glazed containers, many bearing blue-glazed decorations, are well known, since all bear a proprietor's stamped marking. The later molded wares, too, can often be identified by a BRANTFORD/CANADA marking on their bases, originally thought to postdate about 1875. The problem was, however, that while we knew the Brantford pottery was the largest stoneware manufacturer in Canada West and early Ontario, and had a quantitatively

and geographically wide market, not one shred of specific documentation had come to light (or for that matter, has yet), to indicate in detail *what* was made, beyond known marked types.

In dealing with the products of any craft or industry, the two usual avenues of attack are research into written documentation and examination of existing *known* (i.e. marked or otherwise certain) specimens. In surveying early Canadian industries—pottery, glass, iron—more than likely neither will be available to any satisfactory degree. Thus the third avenue is opened—and so to the trenches.

The Brantford pottery burned in 1872 and was rebuilt under William E. Welding in 1873. Then, in 1883, another fire gutted this second pottery building, which was rebuilt in 1884. Welding sold out in 1894; the pottery operation continued to about 1905. During the succeeding 60 years the brick building at the corner of Dalhousie and Clarence Streets in Brantford was used for every imaginable purpose—most recently, and greatly changed, as an auto dealer's showroom. I had had an eye on the site; so had Mrs. William L. McGill, Glenhyrst Arts Council President in Brantford.

Then, last December, Firestone Stores bought the site, and almost immediately the building was demolished to bare ground, including the removal of a concrete base slab which covered the long-filled pottery cellar hole. Demolition occurred on December 5 and 6. With furious site examination, telephoning, raising volunteer diggers, both in Toronto and, through Mrs. McGill in Brantford, and equipment organising, with Walter Kenyon as archaeologist, we began excavations on Saturday, December 10. Kenyon's Law—that when Kenyon arrives on a site, the rain stops—somehow failed that day. The *Expositor* headline, after freezing rain and wet snow, was an understatement.

Weather or not, on December 10 and 11 we opened two short intersecting trenches approximately underlying the main north-south wing of the 1873–1883 pottery building, and the reconstructed wing of 1884–1966. Though one trench straddled a foundation wall, we were not primarily attempting to establish the configuration of the building. There was not time; winter was upon us and Firestone was already drawing final plans for a new building to go up on the site in early spring. This was, in short, an organized pot-hunt to uncover the full range of what the pottery produced, a salvage operation pure and simple.

Round One, as we now call it, unearthed great quantities of shards of salt-glazed container stoneware, often mixed with production pieces—saggers, (unformed lumps of clay used to separate pots in firing) and setting tiles in flat sections or hollow rings. The east-west trench, dug to a depth of five feet, exposed a solid strata of tightly compacted pottery shards, beginning about a foot below the surface, two to four feet in thickness. Over 90 per

cent were remains of crushed and fragmented salt-glazed containers. The remainder consisted largely of American rockingham (stoneware with mottled yellow and brown glazes, plain, wheel-turned work without molded patterns), as well as yellow-ware or mocha, from yellow glazed bowls with circumferal white and brown lines.

Those salt-glazed shards which were marked bore the stamps of Welding and Belding (1867–1872) and W. E. Welding (1873–1883). No marked rockingham or yellow glazed ware was found; the BRANTFORD/CANADA marking was completely absent.

Four small tobacco or sugar jars were recovered in reconstructable form, and dozens of extra lids. Three one-quart-sized bottles emerged; only half-fired, as we discovered later, for an obvious reason. Nothing was intact except for the most unexpected find, a few salt-glazed school-house inkwells, unmarked and previously unknown.

The City of Brantford, which had very kindly surrounded the site with snow fencing and loaned us shovels, closed the survey trenches with a bull-dozer (we had promised Firestone to leave the site as we found it). With a hundred or so bags of shards to go over, we now had just enough to whet our appetites for Round Two in the spring. Firestone was uncertain when building would commence; we planned our return to the site for as late in the season as possible, but a week or ten days in advance of contractors.

After overcoming logistic problems of correlating schedules with excavating and building contractors, and several false starts, substantially reinforced with equipment and student volunteers, and now also a grant from the Ontario Historic Sites Board, we opened new trenches on March 13. We planned on daily runs from Toronto for two weeks, less days certain to be lost because of bad weather. Firestone's contractors had scheduled their excavating for the 20th.

Speed was essential. Since we were primarily after examples of pottery best extracted from the exposed walls of trenches, Walter Kenyon, before departing for Florida and British Honduras, had felt that the most expeditious system would be to get our trench walls as quickly as possible. Material removed in the process would be expendable. The Mayor of Brantford, R. B. Beckett, had previously offered us a backhoe, courtesy of the city, which we declined in the mud of December. Now, with contractors pushing, and six to nine inches of frost in the ground, we accepted, and found on our arrival on the 13th a huge machine with driver waiting to go to work.

Along the Dalhousie Street frontage of the pottery cellar hole, and under that wing of the 1873–1883 and 1884–1966 pottery buildings, we excavated a trench 80 feet long by four feet wide and six feet deep—a foot below the level of undisturbed soil. Then, under the Clarence Street wing we ran a perpendicular trench 40 feet long. Finally the backhoe dug five short

subsidiary trenches, three in from Dalhousie Street, to intersect the main trench; and two to intersect from the opposite side. With trenching completed in four hours that would have taken a shovel crew two weeks, we now had a completely adequate section of the cellar hole opened.

The backhoe also dug four test holes in what from 1873 to 1883 had been the outer yard, bringing up sand and brick rubble, but no pottery whatsoever.

About a foot below surface, over most areas of the trench walls, there was a carbon layer of semi-burned wood, including charred beams and boards. Below this the strata of compacted pottery shards ranged in depth from three to five feet below surface, in most areas mixed with brick. The pottery strata was thoroughly mixed with and imbedded in white wood ash—sometimes quite loose, but nearer the surface cemented almost to the hardness of concrete.

In surveying the pottery strata, we found the lowest levels to be composed entirely of salt-glazed and unglazed stoneware, from heavy containers. This was thoroughly mixed with production setting tiles and saggers, brick, dirt and ashes. The upper levels, directly beneath to two feet below the general carbon layer, included a heavy proportion of salt-glazed shards. In different areas heavy concentrations were found of rockingham-glazed milk bowls and pie plates, without pattern molding, numerous varieties of small yellow-ware bowls with white and brown banding, rockingham-glazed molded and patterned teapots, pitchers, bowls, and spittoons, unglazed flower pots, and semi-fired stoneware of all varieties.

In all areas, shards were occasionally stuck together by remelted glazes. In the Dalhousie-Clarence Street corner there emerged from the upper levels burned and distorted window glass, and shards and teapot lids with window glass adhering. Many shards, of all pottery varieties, were coated with soot. Glaze colors were often distorted; once brown and yellow rockingham glazes had a pearly hue, but no iridescence or encrustation; salt-glazes and once brown Albany slip coatings varied from mustard yellow to olive green.

Markings on salt-glazed wares from the lower levels were typically Welding & Belding (1867–1872), with a very few stampings of Morton & Co. (1849-56) and F. P. Goold 1863?-1867). Those from upper levels were entirely W. E. Welding (1873–83). None of the rockingham wares, plain or with molded patterns, were marked in any way, nor were the yellow-wares. The marking BRANTFORD/CANADA, commonly seen on existing molded rockingham and blue or green glazed pieces, as in December was entirely absent.

Though many dozens of bags of shards remain to be washed, much less completely assessed, the overall pattern is now clear. From this survey, completed and the trenches closed on March 22, it is evident that we have

not a picture of production over the pottery's entire span, but a concentrated view of forms and varieties of pottery in production and in stock during each of the two fires of 1873 and 1883.

The first pottery (1849/1872) was a wooden building; we have no contemporary view, plan, or even description of it. Constructed evidently with its first floor at or near ground level, it burned into a six-foot cellar. Production in 1872 consisted entirely of salt-glazed or brown glazed containers; there is no evidence of molded or finer wares, or of varied glazes. The heavier fire rubble in the cellar hole was compacted and levelled, not removed, in rebuilding.

Welding's building of 1873 was brick—we have woodcut illustrations of this and it too burned into the cellars in 1883, leaving the walls standing. Into the cellars, too, during the fire dropped everything in stock and stored on upper levels. The fire was sufficiently hot to semi-fire finished but unfired biscuit pottery, and to distort metallic oxide—silicious glazes (perhaps 1000–1200° F.) but not to re-fuse or warp finished stoneware pottery (2200–2300° F.).

The reconstructed building of 1884, later extended and expanded, was built within the walls of the earlier building, which had remained largely intact. The cellar hole, never cleaned out, was surfaced with earth, and the pottery in this area after 1884 operated on ground level. A concrete slab was added later. New cellars along Clarence Street to the north were dug for the 1884 building and these existed well into the twentieth century, but were cleaned before ultimate filling. Test holes showed no pottery.

The bulk of the Brantford pottery's production was always salt-glazed containers. Manufacture of finer wares began evidently in the late 1870s, in forms never previously identified, since none is marked. Brantford was, in fact, one of the first potteries in North America to produce yellow-wares, and it may have been the earliest Canadian producer of rockingham.

The wares commonly found with the BRANTFORD/CANADA markings, previously thought to date from the 1870s were, in fact, certainly not made prior to the late 1880s and very likely post-date 1894, when Welding sold out to a joint-stock company.

The Brantford digs, in spite of physical and logistic conditions somewhat less than ideal, were eminently successful. First, we have gained an intensive picture of Canada's most important pottery's entire variety of manufactures during two precisely defined periods. A great gap, knowledge of those unmarked and previously unidentified finer wares made between the known saltglaze of the 1860s and the marked products of the '90s, is now filled. Though perhaps less important, the survey also has confirmed what documentary evidence we have on ownership and operations of the pottery, as the documentation has, conversely, confirmed recoveries from the dig.

INDIANS OF PARRY ISLAND

The rise and fall of Algonkian farming

EDWARD S. ROGERS, Curator of Ethnology

One of the little-known aspects of the Indians of southern Ontario is that many once were rural Victorian era farmers. This was particularly true of Indians who lived on Parry Island, as I discovered during field work among Indians still on the Island in the summer of 1963. With financial support from the National Museum of Canada, I was able to investigate further, both in the field and in the library, some of the factors responsible for the development of farming among the Indians and why it disappeared.

Before 1800, the Ojibwa Indians of southern Ontario frequently planted small gardens although they were primarily hunters and fishermen. As early as the 1830s some groups—Cape Croker, Christian Island, Rama, and Rice Lake—began to settle and till the land like their non-Indian neighbours. But the Parry Island Indians did not really settle down to farming until the latter half of the last century.

In 1850 the Indians of Georgian Bay signed a treaty with the government by which they surrendered all their lands and in return were given certain designated areas. Ojibwa in the Muskoka district were given Parry Island where they soon settled. Other Ojibwa from the north shore of Georgian Bay joined them and in 1877 Potowatomi and Ottawa took up residence on the Island having originally come from Wisconsin. At this time there were 74 Ojibwa, 41 Potowatomi and Ottawa and 12 other Indians, probably Ojibwa, resident on Parry Island, giving a total of 137.

As the Indians settled on Parry Island they established three villages. Each village was composed of from five to ten homes of squared logs with board roofs. Associated with each house were barns for housing the livestock and in back of each homestead were the fields. It is estimated that several hundred acres were under cultivation at one time. Two of the villages had a church—one Catholic, the other Methodist—a cemetery and a school house. And one of the villages had a Community Hall.

They grew corn, beans, potatoes, peas, carrots and other vegetables, some wheat and timothy hay. One variety of corn still occasionally grown was a surprise. It is an ornamental popcorn from Mexico. How it got to Parry

Island is a mystery but it may have been brought there by the Potowatomi, the only Indians who grow it at present.

Livestock at first consisted only of oxen, although later in this period they were replaced by horses, and cattle, pigs, sheep, chickens, turkeys, geese and ducks.

The usual techniques of agriculture were practised. The land was worked with horses and ploughs and harrows. The crops were planted and tended with a hoe. The men did the ploughing and harrowing and both men and women hoed the crops. After planting, the crops were tended during the summer until ready for harvesting in the fall. After harvesting, the crops were prepared for storage and some were placed in root houses. Other produce might be dried and kept in the homes. Squash, for instance, was cut in slices and dried. Some of the garden produce also was taken to Parry Sound and exchanged for store foods such as flour, pork and salt. As well, at this time of year the people fished. Large quantities were caught and salted down for winter use.

During the winter, farming activities naturally were restricted although there were still chores to be performed. Livestock had to be cared for and repairs made. Large quantities of firewood had to be cut for heating and cooking. The men carved axe handles and ladles for sale and the women made quill boxes, splint baskets and moccasins.

With the arrival of spring, families moved out of the villages to the sugar bushes and collected the maple sap. The trees were tapped with wooden spiels and the sap collected in birchbark containers. Two hundred or more trees might be tapped by one large family group and as many as 1,000 containers might be employed. Once the sap was collected, it was stored in large elm and basswood troughs to await boiling in large brass and iron kettles. The sugar was stored for later use in birchbark boxes, and some of the sugar, before it hardened, was poured into wooden moulds. Near the end of the maple sugar season the people began to prepare to plant their gardens.

What stimulated the Indian peoples of Parry Island to undertake farming to this extent? The Wesleyan movement undoubtedly had an effect. They promoted agricultural pursuits among the Indians of southern Ontario and many of their ministers were of Indian extraction and worked closely with their own people. The Reverend Allan Salt, missionary at Parry Island, was from Rice Lake. Also, no doubt, the Indian peoples at this time desired to emulate their non-Indian neighbours and to live a life similar to theirs, now that trapping and hunting were no longer fashionable or profitable for them.

But why, after the First World War, was farming no longer important to the Indian peoples after such a promising beginning? What factors might

explain the disappearance of farming among the Indians? In general, they farmed relatively marginal land and with the increasing technological complexity of agricultural subsistence it was no longer really practical for them to continue. Furthermore, during the First World War there was a high enlistment of Indian men in the services and the women who remained at home were unable to carry on effective agriculture. Also, in the 1920s apparently many of the men sold their livestock for cash with which to purchase cars, a rather new innovation. In addition, training received in trade schools had given them opportunities for employment which could only be found elsewhere and many began moving to the cities. Finally, the development of the tourist trade and utilization of Indians as guides took them away during the summer months when farming would have been undertaken.

Today only about 75 Indians remain on Parry Island. Several hundred have moved elsewhere—Cleveland, Detroit, Toronto—where they are gainfully employed. Only a few of the elders have gardens each summer. Gone are the horses, cattle, pigs and chickens.

"SMALL FINDS" FROM THE ATHENIAN AGORA

Pottery, jewellery, coins, lamps and other modest objects provide details of everyday life in ancient Athens

Mrs. Neda Leipen, Associate Curator-in-Charge, Greek and Roman Department

Although habitation is attested on the site of the Agora in Athens as early as the Late Neolithic period (before 3000 B.C.) and continuing through the Bronze and Early Iron Ages, its function as the city's main square (ἀγορά, public meeting place) did not start before the early 6th century B.C. when, in the time of Solon the Lawgiver, the first public buildings were constructed. It is the Agora of this and later periods that the classical writers refer to when they mention or describe the various religious, administrative, judicial and political, commercial and social activities that took place in the area.

Pausanias, a Greek traveller and geographer who lived in the 2nd century A.D., left us a detailed topographical account of the site, invaluable to the archaeologist. In a number of "sightseeing" walks through the area he noted the various temples and sanctuaries, the administrative buildings, and the long colonnaded porches or stoas, in whose cool shade the Athenians practised their love for dialectics. Above all Pausanias selectively recorded the works of art, statues and paintings he saw around and inside the buildings. Many of these have been identified in the course of modern excavations.

Besides the rich architectural and sculptural remains, however, excavations of the site have produced a great wealth of more modest objects reflecting various aspects of life both public and private that for many centuries went on in the area. Pottery, lamps, coins, weights, measures, judicial equipment, jewellery, terracotta and bronze statuettes, and a host of other "small finds", tell us of the everyday life of the people that inhabited or frequented the area from the early Greek through the Roman, Byzantine, Frankish, and Turkish times.

The first annual field campaign in the Agora was undertaken in 1931 by the American School of Classical Studies, and a regular excavation programme in the area has been maintained by the School ever since. The University of Toronto is one of the group of about one hundred universities in the U.S.A. and Canada that contribute regularly to the support of this school and share in its benefits. The results of the Agora excavations have since 1953 appeared in a systematic series of comprehensive Monographs. Under the guidance of Professor Homer A. Thompson, Field Director of the Excavations, a dozen exhaustively illustrated volumes have so far been published. Each deals with a different category of objects, and each contributes to a more complete understanding of the way of life, the history of the most brilliant City State of ancient Greece, and of Greek civilization in general.

The meticulously kept excavation records have allowed typological and chronological sequences of the finds to be established. This is particularly important in some hitherto more or less neglected and poorly recorded categories, such as the "lowly" Roman coarse ware pottery (*Agora*, Vol. V, Part I, by Henry S. Robinson), or the Roman terracotta figurines and plastic lamps (*Agora*, Vol. VI, by Clairève Grandjouan). Anybody encountering the same type of object at some other site, or studying it as an isolated find without recorded provenience—which all too often is the case with museum acquisitions—will find the Agora publications of greatest help. A properly established chronological sequence of such common finds as Roman kitchenware or lamps is also most valuable in dating other finds when discovered in context with them.

Last year Professor Thompson asked me if I would take part in the study

of the "small finds" from the Agora which in collaboration with Prof. Anna Benjamin from Rutgers, the State University of New Jersey, is eventually to appear as yet another volume in the series of the Agora Monographs. Dividing the finds by the materials from which they are made, Dr. Benjamin has worked on objects of bone and ivory, stone, and miscellaneous clay, and I have started on "small finds" of bronze. During July and August 1966 I worked in the Agora Museum, the reconstructed Stoa of Attalos, situated along the east side of the main square. This long, two-storey building with upper and lower double colonnades was built in the 2nd century B.C. by Attalos, the philathenian king of Pergamon, as a gift to the city of Athens. Reconstructed on and from the existing remains in the 1950s by the American School and under Prof. Thompson's supervision it now serves as the Agora Museum and, "behind the scene", as a vast storage of the finds from the area, combined with offices and workrooms.

What are "small finds"? one might ask. I think that no strict definition exists but generally they are rather small and simple objects used in everyday life, during peace or in wartime; anything from fishhooks, keys, or arrowheads to more elegant items such as jewellery, cosmetic implements, or furniture fittings. In publications they are usually classified into several main categories which in turn are subdivided into more specialized groups.

Of the large amount of small bronzes found in the Agora I have so far catalogued a fair amount of jewellery and dress accessories including finger rings, earrings, pendants, bracelets and belt buckles. The rings are typologically rather well represented including mainly Hellenistic, Roman, and Byzantine examples (4th century B.C. to about 12th century A.D.). Most of the earrings are late, coming chiefly from the Byzantine graves in the area. I was pleased, however, to find among them four single earrings, or rather ear pendants, of the so called inverted pyramid type so popular in the classical Greek period (5th and 4th centuries B.C.). Being of bronze, they are simple cast from moulds, details of decoration and all, obviously to save the time and work that went into their more precious handworked counterparts of gold. Most of the pendants are of the Byzantine period, cross-shaped and often inscribed, but some Roman amulets can be found as well. The Greek and Roman fibulae are represented but the later decorative belt buckles, usually associated with the Barbarian invasions in the early Middle Ages, and one of the best clues to the movements of the invaders, are much more numerous.

The keys are of different varieties, from the finger ring type of the late Roman period to the Byzantine hinged-handle type. They all are equipped with highly diversified patterns of teeth and wards indicating the care the ancients took in securing their property. All these objects are but a small part of the vast amount of the metal finds from the Agora yet to be studied.

Although modest and hardly ever of artistic merit the small finds are of no less archaeological importance than the more spectacular sculpture and painted vases, or the architectural remains. They are unassuming but most authentic documents of the ancient daily life and customs. They help us to visualize vividly not only the events of historical importance—remember only the great number of ostraka inscribed with the name of this or that prominent Athenian of the Golden Age voted to be exiled in order not to endanger the democracy—but they also teach us about the mode of life of the ordinary people, their religious beliefs and practices, their taste in adorning themselves and their homes, their ways in bringing up and educating their children. The small objects also show the technical methods used in different trades and handicrafts. Ancient writers do not necessarily mention all these details of everyday life, small in themselves but important for a student of antiquity. But when they do, we are immensely gratified to find their statements or descriptions confirmed by actual finds. Sometimes, of course, we find strange objects for which there is no explanation in ancient texts and at whose use we can only guess.

The numerous finds from the Agora encompass all the periods, from the Late Stone Age through the Byzantine and Turkish periods, spanning about 5,000 years. The continuity of this long span tells us something of the importance the site played in the history of Greek civilization. Great progress and, at times, great defeat at the hands of the Persians, the Romans, and the Barbarians, are all reflected in the finds; their quantity and the quality of their workmanship always are related to the political ups and downs. More finds, small and otherwise, are expected in the near future when the projected excavation of the north side of the Square begins.

The excavating and the research staffs of the Agora usually return home to their colleges and universities early in September leaving the offices in the Stoa in care of a few Greek and American members of the permanent staff. In spring or early summer the "crews" return to resume their work in the field or on publication of the Agora material.

A diorama of the Agora with the Acropolis in the background is in the Athens Gallery of the Royal Ontario Museum. On display since the opening of the gallery in 1962, the year the Museum celebrated its 50th year, the diorama shows the Square as it was at its best period about 100 B.C. when all the most important and distinctive buildings had been built, and before damage by the besieging Romans in 86 B.C. A model of the Athenian Acropolis and other three-dimensional models and reproductions make the Athens Gallery, a gift of the Walter C. Laidlaw Foundation, an excellent teaching instrument and the next best thing to an actual visit to Athens and its monuments.

A LIBRARY OF FISHES

What is a research collection? How is it used? A behind-the-scenes look at the Museum's vast "library of fishes".

Dr. W. B. Scott, Curator of Ichthyology and Herpetology

Basic to the function of the Royal Ontario Museum is its research collections. But the use made of them is seldom described or explained. The public sees the galleries of display materials but usually is quite unaware that the museum's most valuable assets are its research collections which, in the zoological sciences, are never on display.

What is a research collection? Essentially it is an organized grouping of related, documented specimens; documented in that the origin, collector, date, environmental conditions at time of collection and numerous other data are known and recorded.

A research collection may be compared to a reference library. Each specimen is a bundle of information available for study by a succession of researchers, each of whom may make a contribution to knowledge. With the planned growth of a collection, its usefulness and value continues to increase. However, unlike a library, where many of the volumes can be replaced, a research collection contains "single copy prints" which are irreplaceable, although sometimes substitutes may be found.

The foregoing general comments about zoological collections may be illustrated by one particular collection, that of the Department of Ichthyology. On the ground floor of the ROM, the Department has one of the largest reference collections of fishes in Canada (only that of the Institute of Fisheries, University of British Columbia is of comparable size) and the most complete collection of Canadian fresh water fishes in the world.

In fishes, the concept of uniqueness embodied in the "single copy print" idea is particularly true because fishes are molded by their environment. Many of their structural features, such as the number of scales or plates, the number of fin rays and even the number of vertebrae, are influenced by such environmental conditions as temperature and salinity. Most fishes in temperate and boreal waters also carry their life history on their scales, an effect of seasonal growth instead of the more uniform growth experienced by tropical fishes.

The ROM's research collection of fishes consists of approximately 26,000 catalogued units. One catalogue unit may consist of one specimen or 300 specimens, or even more. In all, approximately 500,000 specimens are avail-

able for study. These are whole fishes that are first fixed in a formalin bath, then washed out in water and finally stored in 65 per cent alcohol in bottles and fibre-glassed-lined boxes. These containers are arranged in an order that reflects the broad relationship of the fishes, one species to another.

Catalogued specimens are entered on 3 × 5 index cards and filed in such a way that all records of a given species are grouped and then arranged geographically. From these card records, distribution maps are prepared and periodically brought up to date so that the known Canadian distribution of any species is available.

The collection of fishes, like many museum collections, originated as a teaching collection and still serves in this capacity today. A high percentage of Canadians working in the field of fisheries in Canada have used the collection, not only during their undergraduate and/or graduate years, but later during their professional careers. However, in recent years recruits to this field increasingly are drawn from universities in the United States because Canadian training programs fail to meet the demand. Students from nearby universities, groups of high school students, Department of Fisheries inspectors, and Conservation officers in training are among the many who make use of the facilities.

A good collection is created not only by staff collecting, although this is the best way, but also by exchange. By exchange arrangements with foreign institutions, specimens of great biological significance can be obtained for teaching and study.

Most collections grow by study and acquisition of materials close at hand, gradually moving farther afield as interest and knowledge increases. During the acquisitive, or faunal survey stage, the press and the public generally are most interested. But public interest palls during the assimilation process when the materials gathered are being studied. Thus, oceanographic voyages and African expeditions attract much attention, but little is heard of the results achieved, possibly because the scientists involved do not believe that anyone but other scientists would be interested, or they do not translate their findings into language acceptable to non-scientists. Whatever the reason, the communication gap is unfortunate and the public is the loser.

Traditionally, zoological reference collections are used as an aid in the identification of unknown animals sent to museums by other biologists. While there is always a special thrill in working with an unknown fauna from a distant land, all too often the material for identification is fragmented; it may have been removed from the stomach of another animal, from an archaeological site or an ancient Indian encampment. Fragmented remains usually require considerable study before a positive diagnosis can be made. However, the first indications of new or previously unknown fishes often have been found in just this way, and such material cannot be brushed aside.

This service aspect of museum business can be, and in the ROM is, a

time-consuming and demanding role and one that we have so far been pleased to continue, providing our customers are prepared to be patient. Of the 25 accessions received in the ROM's Ichthyology Department in the first three months (the "quiet" months) of 1967, half are requests for identification. Some examples are fish bones from an Indian midden in Michigan; a collection of freshwater fishes from Guyana, South America; bird stomach contents from British Honduras; stomach contents from Atlantic fishes and freshwater fish collections taken during pollution studies in Ontario and the Maritime Provinces. During the last 20 years, hundreds of similar requests have been answered.

The preparation of reference books and guide books to regional fauna would seldom be possible without access to well organized collections. This is why most of the guide books available to the public are written either by museum staff members, or by those who have been granted free access to the collections (for example, Godfrey's *Birds of Canada*, Kortright's *Ducks, Geese and Swans of North America*, Peterson's *Mammals of Eastern Canada*, and Leim and Scott's *Fishes of the Atlantic Coast of Canada*. Living material is used whenever possible but adequately preserved and documented reference specimens are essential for the preparation of accurate descriptions, drawings, etc. Examination of stomach contents reveals food habits, study of scales permits age and growth analyses and X-rays reveal details of internal structure.

But, as obvious and direct as these services are, they are not the most important in the eyes of the curators who work with the collections. To them the most important studies are those concerned with the tracing of pathways by which organisms have evolved, the genetic relationships of biological groups and the geographical distribution of animals. Such fundamental studies often are the reason the zoologist first seeks employment in the museum.

Those who work in this general field of systematic zoology are called systematists or taxonomists, since they study the kinds and diversity of organisms and their relationships. Systematics is a most fundamental branch of biology since, as stated in a recent newsletter from the United States National Research Council ". . . organisms cannot well be discussed or treated in a scientific way until some taxonomy has been achieved—it (systematic biology) is also the most inclusive, since in its various aspects it gathers together, summarizes, and utilizes everything that is known about living things, whether morphological, physiological, behavioural, or ecological."

Sometimes the ROM has been called "a storehouse" and perhaps in a sense this may be appropriate. But it is a special storehouse that provides a unique service to the public—a record of nature through the ages.



JOHN H. SWORD, LEFT, ACTING PRESIDENT OF THE UNIVERSITY FOR A YEAR STARTING IN JULY, ABOARD PORTE DAUPHINE WITH HON. S. J. RANDALL AND THE INSTITUTE'S DIRECTOR, PROFESSOR A. D. MISENER

Lake Ontario uses heavy water to build a mighty wall from bottom to the top

LEONARD BERTIN

MANY an air traveller, gazing down on Lake Ontario as he heads south towards New York State from Toronto's International Airport, has remarked the muddy waters of the Humber or the turgid wake of a Mimico landfill project. The perspicacious observer may also, at certain times of the year, have spotted a further pattern on the lake – a sharp change in colour a mile or more from the shore that is continuous all around the lake. Until recently, however, any curiosity he expressed would have had to remain unsatisfied. Even scientists familiar with the Great Lakes were unaware that, each spring, a wall of "heavy water" (quite different, of course, from the heavy water of the nuclear physicist) collects along a line parallel to the shore. Stretching downwards from the surface to the bottom, it provides an effective barrier between warmer water near the land and the very cold water in the body of the lake.

On the shore side of this barrier, in early May, sailors or the occupants of low-flying planes can find all manner of debris from algae, dead fish and the like to telephone poles and large logs. Then gradually, as the lake warms up, the barrier moves further from shore until, midway through June, it loses its identity completely in deeper waters, some miles from the shore.

Dr. George Keith Rodgers, who made this discovery, tells how he gained his first clues while engaged on a routine temperature survey back

in 1959. It was not until 1965, however, that he had the chance to carry out a more thorough investigation and gain a better understanding of what was happening.

Born in Toronto in 1933, Keith Rodgers attended Davisville and John Wanless public schools and then graduated from Lawrence Park Collegiate. He entered Varsity's Faculty of Applied Science and Engineering and received his B.A.Sc. and then went on to British Columbia to specialize in physical oceanography. He gained his M.Sc. in 1958 for work on the circulation of water in Knight Inlet, an interesting fjordlike structure on the coast, north of Vancouver.

"At this stage", he told me, "I rather assumed that, to continue my career in oceanography, I would have to stay on the West Coast or move right over to Halifax, on the Atlantic seaboard. Then, quite a different opening came along, right out of the blue, in the form of an offer of a job from the Ontario Department of Lands and Forests, aboard the 347-ton research vessel Porte Dauphine." The task it transpired, involved fundamental research on the behaviour of waters of the Great Lakes. His chief was to be Dr. David V. Anderson, now an associate professor in Varsity's Department of Mathematics.

"I had never realized before that the techniques of oceanography were also applicable to inland waters", said Rodgers, "but soon found this to be so."

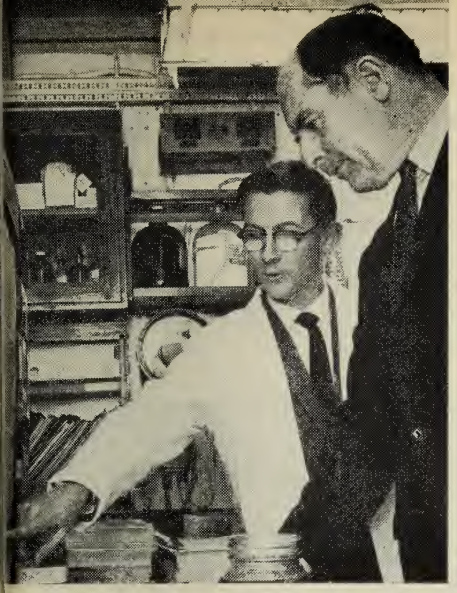
Part of the Porte Dauphine's 1959 program while still with Lands and

Right: In a Porte Dauphine lab, Dr. Rodgers explains the water-wall to a visitor (J. D. Heaman) with the aid of charts

Forests involved a routine temperature survey of Lakes Ontario and Erie, in an effort to establish what the seasonal patterns were. The Porte Dauphine, which belongs to the Royal Canadian Navy, was well equipped for many different types of research and was ideal for the purpose.

One of the very marked peculiarities of Lake Ontario, and to a certain extent of Lake Huron as well, explained Dr. Rodgers, is the fact that the classical picture of temperature stratification is not exhibited. "People", he said, "have the impression, for example, that in spring and summer the surface of any lake is warmer with cold layers underneath, but this is not always so. What we noticed in our 1959 survey was that, in the larger lakes, water near the shore is stratified as one would expect, but the central waters, the great core of the lake, remain vertically homogeneous, so far as temperature is concerned. Furthermore, the two zones were separated at the surface by a very strong horizontal temperature gradient, amounting to a difference of from five to seven degrees centigrade over a distance of 200 yards, in some extreme cases. The water in the midst of this gradient, we observed, was about four degrees, centigrade, which happens to be the temperature at which water is most dense."

Rodgers made use of the data in



his 1964 doctorate thesis but had no opportunity at the time to investigate the matter further. He was curious, however. "The facts suggested", he says, "that there was a barrier to horizontal water movement and subsequent examination showed a marked difference in the colour and turbidity of the water."

In 1960 responsibility for Great Lakes research had passed from the Provincial Government to the University of Toronto and the Great Lakes Institute was formed with Dr. George Langford as Director.

With opportunities for fundamental research increased, Rodgers has had an opportunity to inquire further into the why and the wherefore of the thermal bar. Working first alone and then with his research associate, Paul Hamblin, another physical oceanographer, he returned to the single problem of the sudden surface temperature discontinuity. The two of them made a more detailed thermal survey and they also made some current measurements and found that there was a convergence or running together of the two masses of surface waters. From this data, they compiled various charts.

As revealed by the investigation of Rodgers and Hamblin, it is clear that the thermal patterns of Lake Ontario are far more complex than was previously realized and change profoundly at different seasons.

By far the greatest proportion of all water in the lake, for example, never rises far above four degrees, the temperature of maximum density, and is at much the same temperature at all depths.

Near the shore, where the water is shallow, it cools rapidly in early winter and begins freezing at the edges. In April the pattern goes into reverse. Now, the shallow waters around the edge of the lake are warming up faster than the great body of water in the middle, until, about the beginning of May, an interesting situation arises. The water near the edge is at a temperature higher than four degrees, centigrade, and that in the middle is still below four degrees. At the line where they meet, the four-degree water, because it is denser than water above or below this temperature, forms a wall of heavy water that is almost as effective as if it were solid. The evidence of this is there in the form of all the multivarious garbage that collects along the warm side of the barrier. (*Continued*)

Dr. Rodgers is the first to emphasize that the picture is still far from complete. "We already know, for example, that the so-called barrier or bar is not a static feature of the lake", he says. "We have some evidence for a convective effect, due to the tendency of the dense water to sink to the bottom of the lake and be replaced. It still remains to be shown whether the water then moves towards or away from the shore and this could be important."

Dr. A. Donald Misener, who succeeded Dr. George Langford as director of the Great Lakes Institute, stresses too, that the temperature work is only one small facet of the problem of understanding the behaviour of waters in the Great Lakes, their comings and goings and the factors that tend to raise or lower the water levels, to determine the degree of pollution and to influence the nature and movement of animal, fish and vegetable life in the system. "The waters of the Great Lakes are probably Canada's most important single asset", says Dr. Misener. "It is in our interest to understand and protect them, but to do this effectively, we must carry out far more scientific research than is being done at present." Money, he stresses, is not the only problem. The greatest shortage is of scientists with necessary knowledge and motivations. "There must be many more talented students in our schools and universities who are unaware of the interesting work that is waiting to be done in Canada's inland seas."

TV-teaching

(Continued from page 64)

The real responsibility of the educators is programming.

At present, all of our formal lectures on television are produced in a small studio. Still in preparation is a large, full production studio, the modest equivalent of the kind found in a small TV station. It will be large enough for a multiple-set program in which we may have full chemistry benches and special physics equipment for demonstrations. There may be team teaching, with two or three professors talking about their subject in relation to their equipment.

The social scientists are anxious to carry out group interaction demonstrations in the big studio. The teachers of languages – English, French, German, Spanish – are looking forward to arranging modest dramatic productions as part of their formal courses. In these, students will take part and then discuss and criticise their own performances and the intellectual content of what they have done in class.

The small studio is long and narrow but flexible. The professor performs at one end. At his finger tips are three revolving writing surfaces. He can fill one face, turn to the next and then to the third, and he can easily return to any of them. Close at hand is a graphics and still-photographs stand on which he can point out particular features of illustrations. Behind the

how Scarborough does it

professor is a rear screen projector on which 35 mm. slides can be displayed.

A professor who prefers a more informal approach to illustrations may use an overhead camera for viewing books, pictures, and other objects.

The environment is intimate. Because of the limited space, there is less chance of a professor pacing back and forth. This makes the camera work easier and reduces the risk of the students becoming sea-sick. At the



ADVISORY COUNCIL MEMBERS INSPECT THE SMALL STUDIO

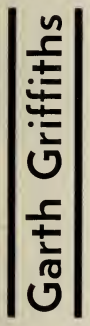


Some of Scarborough's angelic angles

other end of the room, the production control area, are the technical producer and program director. The studio has three cameras, one of which is the overhead instrument.

The heart of our system is really the Videotape/Telecine room and the Master Control room. In the Video/Telecine room are two broadcast-quality tape recording and playback machines. On them we record all the formal lectures that are to be

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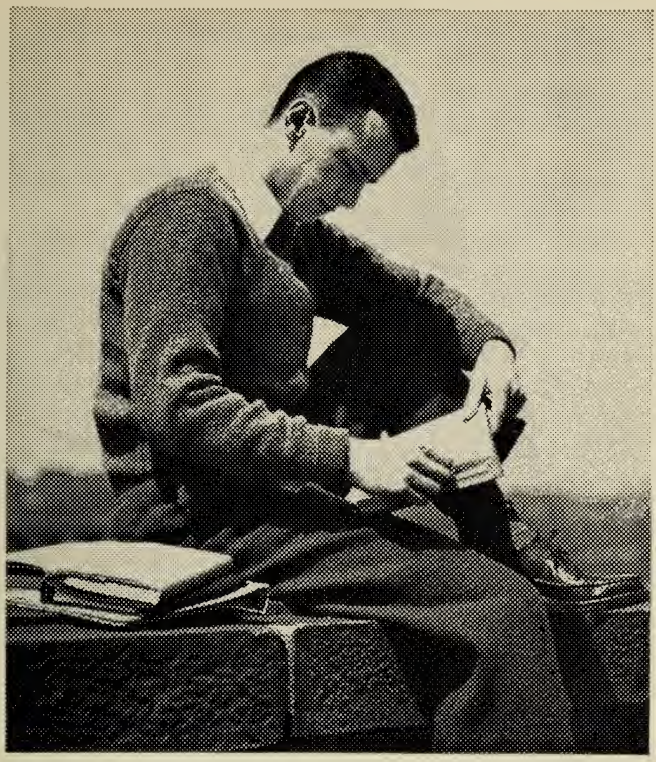
kept for a minimum of three years. Here we tape fine quality programs that can be shown on any television facility in the country, and we may also play these back to audiences in the College. There is a small Videotape machine used chiefly for multiple repetitions of programs which are temporary and not of high quality. We may tape a program on Monday, show it on Tuesday, Wednesday, Thursday and Friday — then erase and use the tape for something else the next week.

We have two Telecine machines that allow each camera to be optically connected with 35 mm. slide and 16 mm. film projectors. Slides or films, pictures and sound, can be distributed to any lecture hall for insertion in a lecture. They can also be routed to any studio where a program is being created.

The Master Control Room is a complex of intricate equipment needed to produce or present taped, filmed, or live programs. The switcher panel permits the routing of signals from 24 different sources to any of 50 viewing areas, individually or in combinations. All may be pre-set and controlled by one master switch, but when Scarborough College has 100 or 150 classrooms, the switching will be done by punched tape. With the degree of automation we now have, the entire Videotape/Telecine area and Master Control can be successfully handled by one competent operator.

The College has three other small studios. One of them is a fully serviced laboratory in a room 16 by 18 feet and 20 feet high. From this room can be given demonstrations or introductory talks to classes in botany, chemistry, physics, geography, geology, astronomy, microbiology or zoology. It has two cameras and a switcher.

In this studio, the professor runs his own show. He can sit behind an island bench and look at his students through one camera. He can see himself in the small monitor in the switcher without really moving his eyes from the camera lens. He knows when a reasonably good picture is being transmitted. If he wants to show a microscope slide,



What price education? It is beyond price! Education cannot be bought, borrowed, or inherited. The only way to obtain it, is to earn it. Stelco recognizes its value, and the increasing need for it, in today's highly-competitive atmosphere . . . and also recognizes that specialized education is denied to many deserving young Canadians through lack of funds. This is why Stelco sponsors a program of assistance to universities, technical schools, and students across Canada, by providing awards, scholarships and bursaries in Technology, Engineering, Science, Business Administration, Teaching, Commerce, and Finance.

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he will have the second camera set up over a TV microscope, with a slide in position and pre-focused. By pressing a button on a hand-held control box, he sends a picture from the camera to the class rooms.

While he directs the attention of the students to the camera and perhaps asks them to sketch what they see, he may hang a chart or a drawing in front of the first camera. When he presses another button, the students see the chart through this camera. He can reinforce what he has shown with as many as 32 slides that have been loaded in the Telecine chain in Master-Control. Or the professor may show a previously-made piece of Videotape or a bit of film. The whole range of the College's TV facilities are his at the touch of a button. If a complex production is necessary, an operator is assigned to help.

However, before any of these facilities and services are of value, the professor must be convinced that what he will do on television will be intellectually rewarding for him and for his students. He should not be required to spend more time, on the average, teaching by TV to 500 students than he would have to spend teaching 100 students face to face. Except in an emergency, no teacher at Scarborough College gives televised lectures unless he or she has had extensive experience in giving the course in the conventional way.

During his year or more of face-to-face teaching of a course that is to be televised, all formal lectures are audiotaped; everything the professor says, and even what he shows, is on the tape. Then our production staff prepares a complete script which the professor edits with the help of a producer. During the editing, many kinds of visual material may be suggested and the graphics and photographic section prepares it.

After the production meetings, a final script is prepared. The professor decides whether he will "ad lib", work from the script, or speak with the help of cue cards held up for him beside the camera. This blend of production-staff artistry and a teacher's scholarship is the stuff of success.

The teacher, it should be emphasized, has the final word. At first it is mostly no, but, with experience, his decisions become more and more yes. When script and the visuals are ready, 90 minutes are devoted to taping of a lecture of approximately 40 minutes.

Altogether, a teacher spends about triple the time preparing and taping a TV program that he would preparing and delivering a classroom lecture. But he uses a tape for three years, correcting or updating when necessary.

A missing element is direct feedback from the students to the professor during the lecture. We get around this by having students submit their questions in writing, signed or unsigned. The professor may answer in writing immediately and/or devote a TV period to a collection of answers for the benefit of the whole class. We considered installing an elaborate question and answer system for communication during or after a

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lecture, but experience elsewhere has shown that such facilities get little or no use.

We are planning to equip at least one lecture theatre with a response station at each student place. The student, presented with a variety of stimuli on the screen, will be asked to respond by pressing appropriate buttons. Usually a multiple-choice question is the stimulus. A small computer will give a class average response or will record individual responses. Until response stations can be installed, we are going to experiment with a less elegant substitute. Before the lecture begins, the student will be given an IBM card. The professor will ask multiple-choice questions which the student will answer with a carbon pencil. After the lecture, the cards are to be taken to our computer terminal, with results available later in the day.

We must strive always to use the medium imaginatively. One thing we are trying — with considerable success I think — is dialogue between a professor and selected students.

However the arguments may run about television lectures, televised undergraduate laboratory teaching is less controversial. In any one science we may have in session at the same time as many as 10 laboratories, each accommodating 20 students. Although a teaching assistant is in charge of each room, all the introductory remarks and demonstrations usually are displayed on screens simultaneously in all 10. If only one section of the 10 is involved, the production is

done "live" from one of the four demonstration studios. Difficult or costly demonstrations are taped for use as long as they remain topical.

Some questions are handled by the teaching assistants. Others are telephoned to the professor and the questions and answers are screened in all the labs. Rare specimens can be seen by everyone. Large and expensive apparatus can be shown in operation to large numbers of students. The uses of the system are legion.

Often we have three laboratory programs and two lectures in transmission to as many as 40 different places.

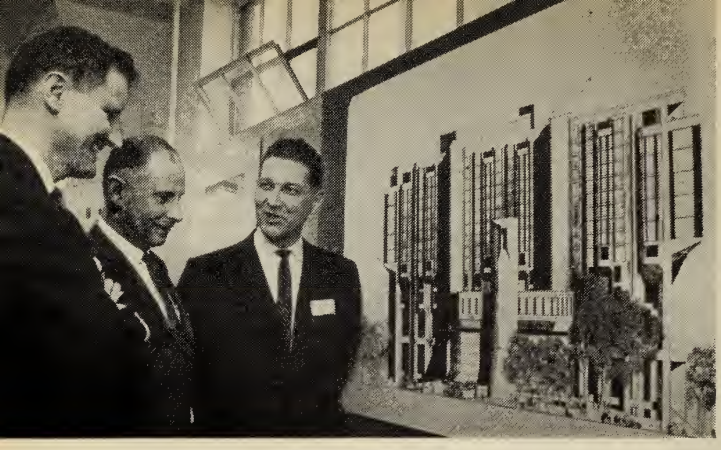
At Scarborough College we have spent many hours working out the legal rights of the professor as a television teacher. His intellectual achievements must not be inhibited or exploited. No one other than the professor and the students for whom the program was made may view a televised lecture without prior permission of the lecturer. In practice, most professors have no objection to being seen at work, but if they wish to object, they may do so effectively.

Agreements also cover the use of tapes should the professor leave the University. He has the privilege of buying the tapes, he may allow us to use them once more, but no longer, or he may direct that they be erased. If we want to sell the tapes to another university or to an outside agency, he must be compensated. We may not capture his intellect on tape, then fire him, or shoot him — certainly not without paying an appropriate sum to his widow!

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Dr. R. H. Blackburn, the Chief Librarian, *right*, at Library preview with Professor R. Brian Land, *left*, director of the School of Library Science (which will occupy one of the three buildings) and M. E. Malcolm of Stone & Webster Canada Limited, the project managers.

THE LIBRARY

(*Continued from page 27*)

Purpose of this effort is to furnish the University of Guelph, Brock and Trent Universities, and Varsity's own Scarborough and Erindale Colleges with library resources needed for undergraduate work in Arts and Science and to provide each with a nucleus for more diversified collections in years to come.

The costs of the project were met by an Ontario Government grant, of which $1,300,000 would be spent on books. The U of T Library would select, acquire, process, and deliver five identical collections of 17,500 in-print monograph titles (about 35,000 volumes) in 26 subjects of concentration based on the selection for Scarborough.

The books would all be pocketed and labelled, and ready for the shelves. Subject catalogues, author-title catalogues, and shelf lists, printed by computer, would be supplied with each collection. During the year, current additions would be reported in the form of quarterly cumulations

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based on monthly lists; up-to-date cumulated catalogues would be forwarded each year. At the end of the project, each library would have its choice of a set of I.B.M. cards for its collection, a magnetic tape from which further catalogues could be printed, or a perforated tape from which catalogue cards could be produced by Flexowriter.

The Chief Librarian, Dr. R. H. Blackburn, set up a special team which at its peak would number nearly forty. Miss Violet Taylor was in charge of selection; Ritvars Bregis planned the computer work, and under his direction, Mrs. Susan Merry took charge of ordering and Donald Smith of cataloguing.

ONULP reached its original selection target of 17,500 titles by December 1965 — in just half of its allotted time. The first issue of the catalogues, reduced from their computer size by photography and offset printed in 12 × 9 book form by the University Press, was the second such production in the world. It missed out on first place by only a few months.

With money left over, it was decided to continue until most of the funds had been committed. By June 1 each library had received 44,510 volumes — far more than expected, four months earlier than expected, plus a grant of $10,000 from the unspent balance in the project budget.

Many libraries at home and abroad have subscribed to ONULP's distinctive catalogues (at $100 a year). The operation has been studied by visitors from the British Museum, the National Library of Canada, the Library of Congress, Trinity College, Dublin, the National Library of Wales, the New York Public Library — and others.

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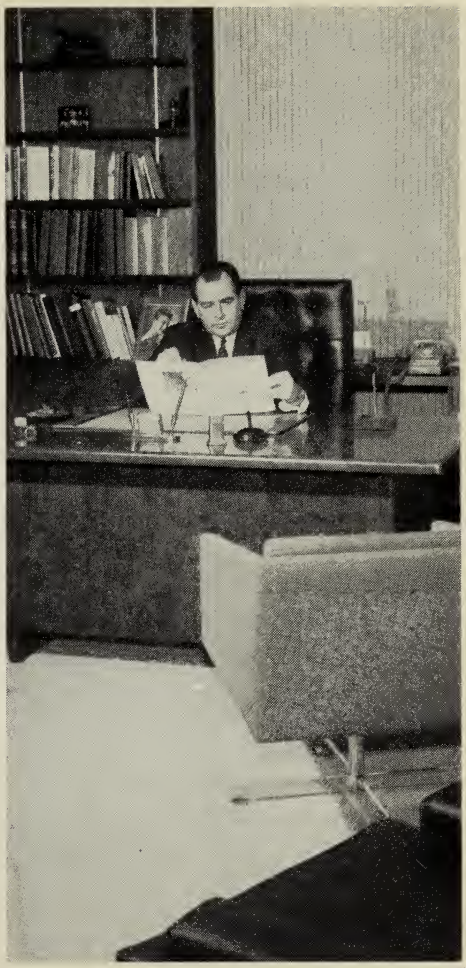


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